Smithsonian

FEBRUARY 2001

Seeking a Safe Place to Nest,
Wood Storks Head North

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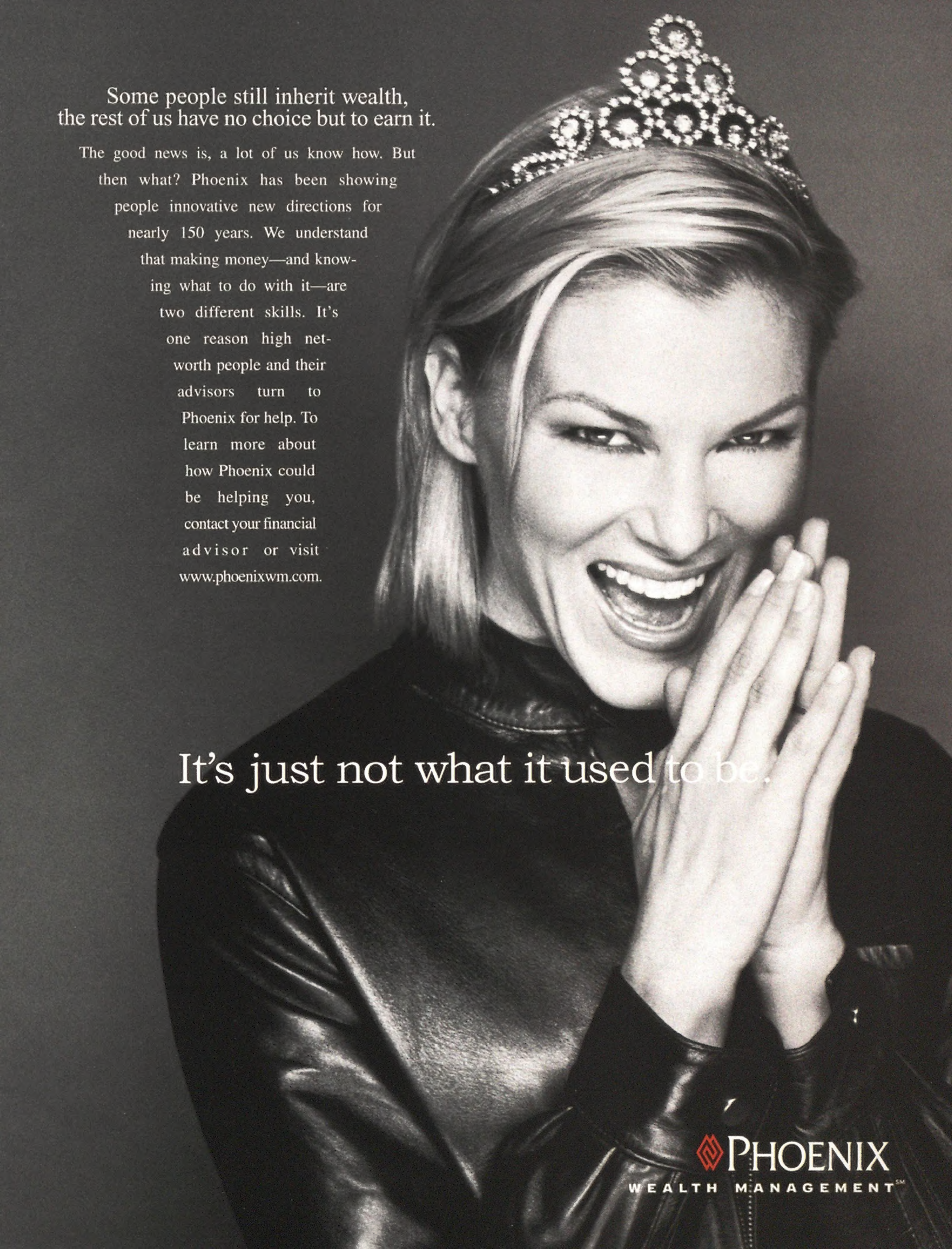

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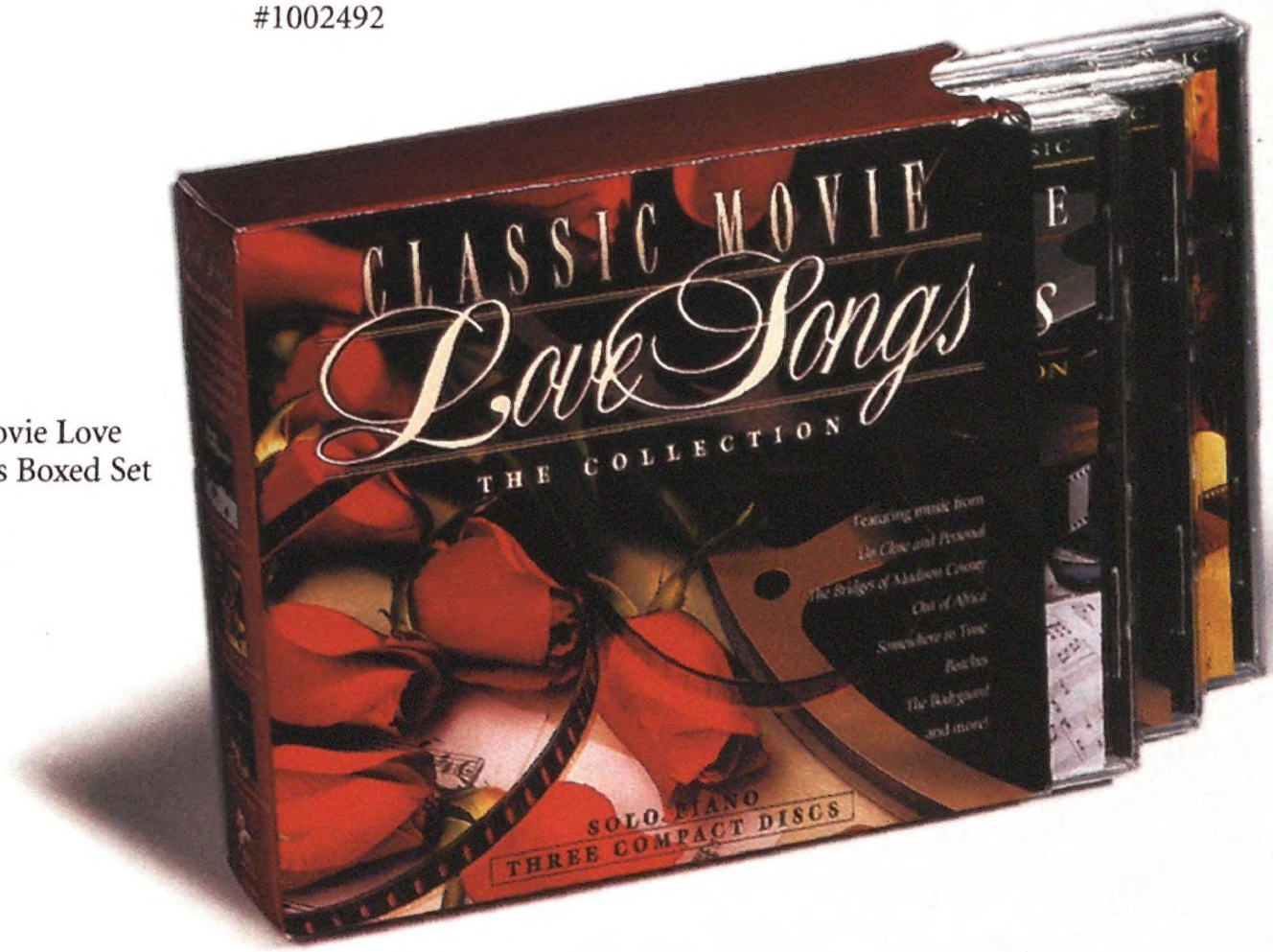

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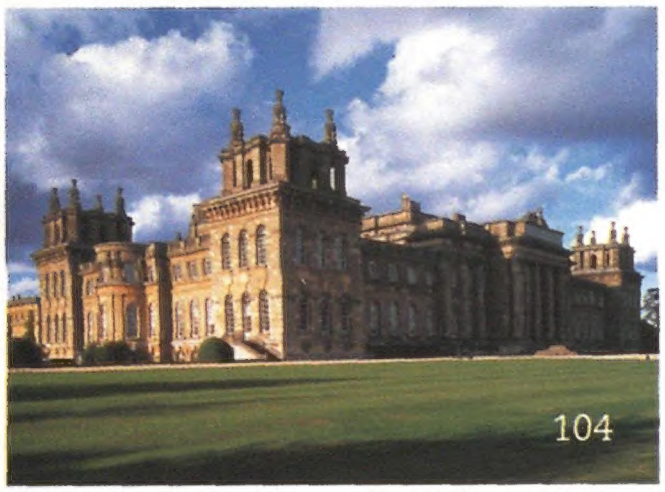

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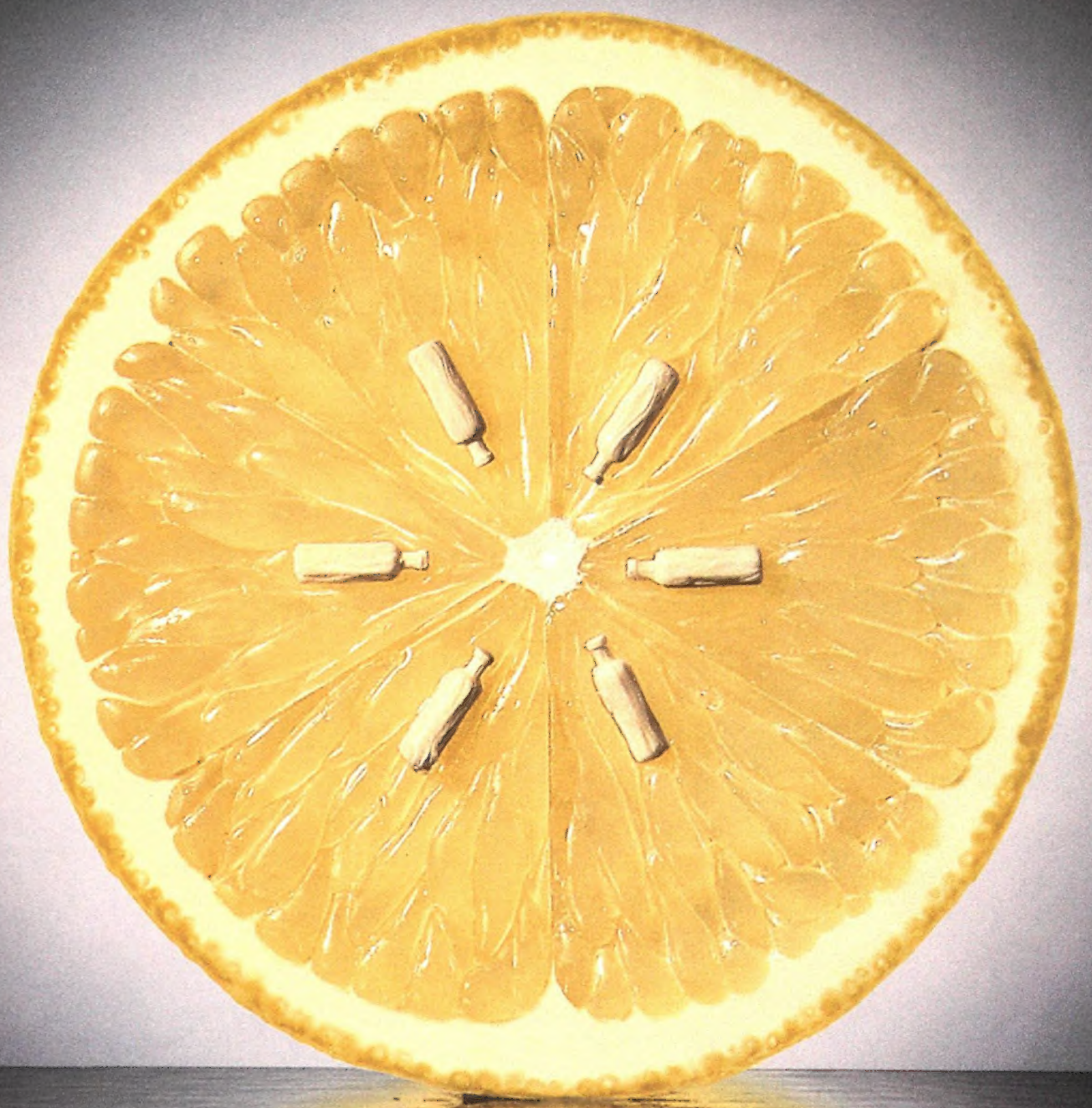

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departments

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Cover

Cover Two fledgling wood storks, about 8 to 9 weeks old, preen their feathers in synchronized fashion atop a nest in South Carolina's White Hall rookery. Wood stork young have yellow bills and dark feathers on their heads and necks; by adulthood, they have lost these feathers, revealing the distinctive blackish skin on their heads and necks.
PHOTOGRAPH BY TOM BLAGDEN

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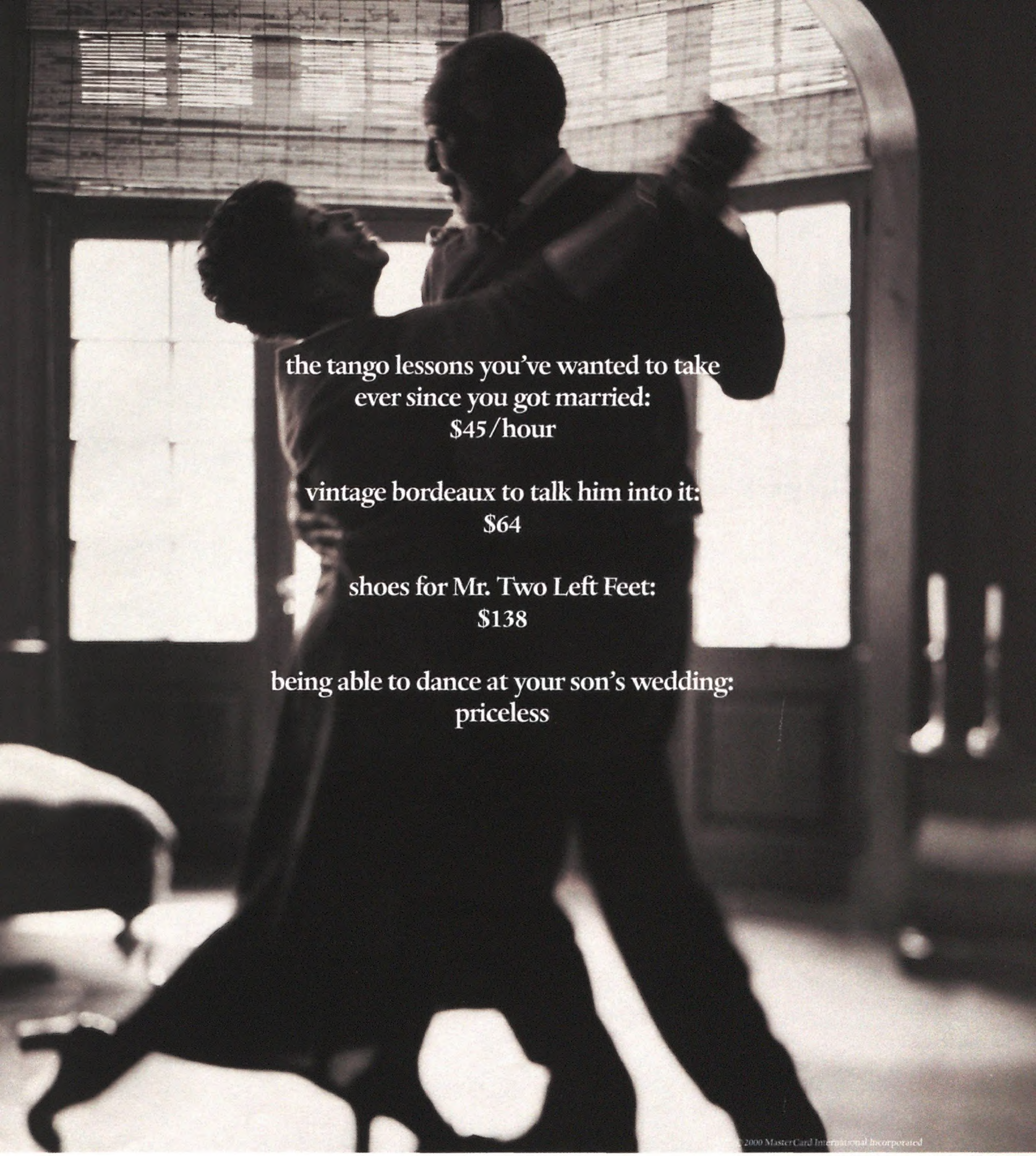
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Investor: Well, mostly, I want to know I'm doing the right thing…for me…I mean.

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Investor: That's what I was counting on.

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Mr. Jefferson's Writing Box

A NOTE FROM THE SECRETARY

THE GRAND NEW EXHIBITION ON THE AMERICAN Presidency in our National Museum of American History displays hundreds of objects—General Washington's uniform and sword, the hat Lincoln wore the night he was shot and the drum that was struck at his funeral, a Roosevelt-era teddy bear, a Clinton saxophone, campaign paraphernalia and White House china and scores of other everyday items that have acquired an outsize significance because they touched the official history of the nation. But among all the items, none deserves its position of special honor more than the portable lap desk on which Thomas Jefferson drafted the Declaration of Independence.

Jefferson designed the desk while a delegate to the Continental Congress in 1776, and had it built by a Philadelphia cabinetmaker. The "writing box," as he later called it, is of mahogany, and of modest size: $9\frac{3}{4}$ inches long by $14\frac{3}{8}$ inches wide by $3\frac{1}{4}$ inches deep. There's a folding board, lined with green baize, attached to the top—when it is opened, the writing surface grows to $19\frac{3}{4}$ inches. A drawer in one end of the desk has space for paper, pens and a glass inkwell. The whole is about the size of an attaché case—barely larger than the first generation of laptop computers in our own day. But this 18th-century think pad, at least, earned the name.

Thomas Jefferson drafted the Declaration of Independence on this lap desk, now on display at the American History museum.

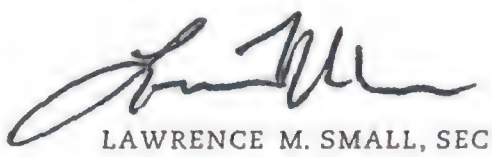
The desk on which a new nation announced itself to the world in 1776—in Jefferson's script of marvelous clarity and straight-line precision—had a long career of service. Indeed, Jefferson used it for almost 50 years, through all his subsequent life as politician, ambassador, statesman, inventor, architect, educator, President and private citizen. And as the United States grew and prospered with each passing year, the significance of the writing box grew too.

In 1825 Jefferson's granddaughter, Ellen Randolph, married Joseph Coolidge of Boston. As a wedding present, Jefferson had a "beautiful"—his word—inlaid desk made for her new home in Massachusetts by a cabinetmaker at Monticello, John Hemings (the half brother of Sally Hemings, and one of five slaves freed by Jefferson in his will). But the ship carrying the desk from Richmond to Boston went down at sea, and Hemings was too old and dim of sight to make another. So Jefferson decided that Joseph Coolidge should have as a replacement the writing box on which he had drafted the Declaration. "It claims no merit of particular beauty," he wrote to Ellen in November 1825. "It is plain, neat, convenient, and taking no more room on the writing table than a moderate 4to. volume, it yet displays it self sufficiently for any writing." And, he added, "Its imaginary value will increase with the years. . . . "

Lest the authenticity of the desk be in doubt, Jefferson attached an affidavit in his own hand—and, it's satisfying to suppose, written on the desk—under the writing board: "Politics as well as Religion has its superstitions. These, gaining strength with time, may, one day, give imaginary value to this relic, for its association with the birth of the Great Charter of our Independence." The association was not just with that Charter, of course, but with the long, momentous course of a singular life.

The Coolidge family kept the desk for the next 50 years (but almost certainly did not use it), and, true to Jefferson's prediction that it might be "carried in the procession of our nation's birthday, as the relics of the Saints are in those of the Church," the desk had acquired by 1876, the centennial of the Declaration, the status of a sacred object. The family presented it to the nation in 1880, and their gift was first displayed in the Department of State. The Smithsonian has had the desk since 1921—and does it justice today by making it a focal point of the Presidency exhibition.

The desk wears its status lightly. Up close, you can't help but notice a series of ink stains on the surface of the drawer. They are the careless, reassuring evidence of life. They mark the desk to this day with the daily humanity of the man who leaned on the writing box for half a century and supported on its sturdy wood the immense store of his mind.



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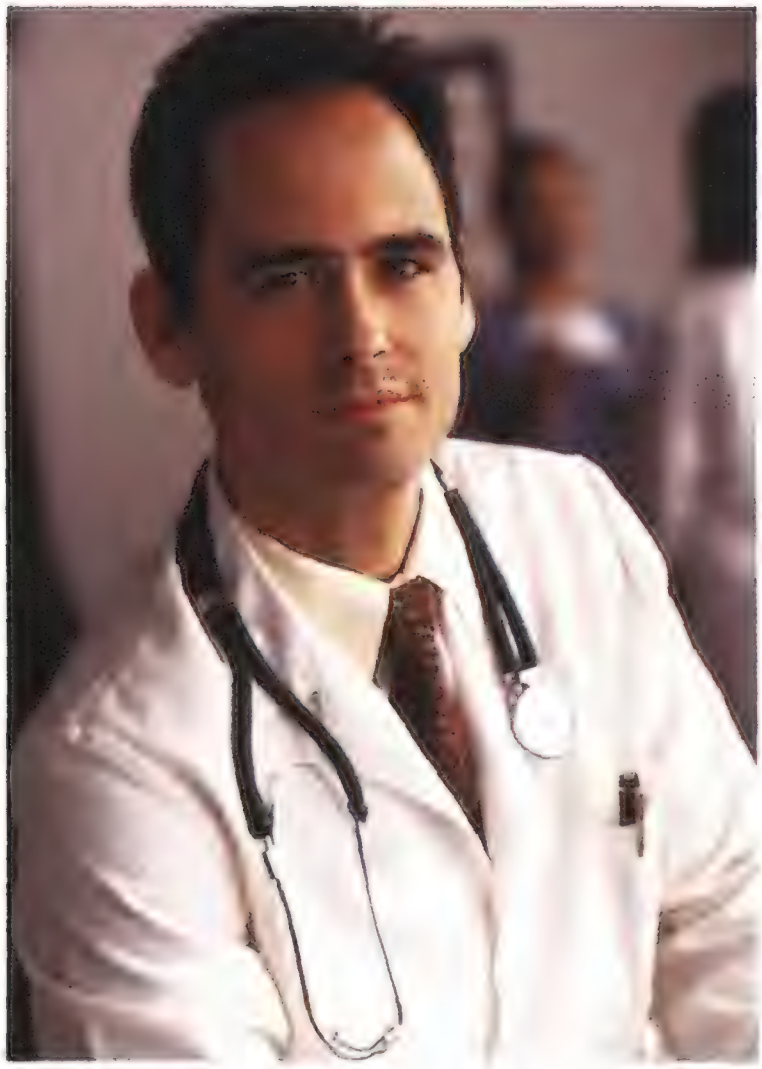

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Fight for your bones the way you'd fight to save your heart, your mind, even your teeth. Even health-conscious women can let menopause take as much as 25% of their bone before they know it. Just being Caucasian or Asian can increase your risk for postmenopausal osteoporosis. Family history or smoking are also factors. And these are just a few of the risks. Sadly, calcium alone may not be enough to protect you from bone loss and fracture.

Fight back with one of the strongest allies you can have—your doctor. Ask about Actonel, a proven weapon in the battle against postmenopausal osteoporosis. Actonel is a nonhormonal prescription medicine that helps your bones become more fracture resistant by actually reversing bone loss.

You should not take Actonel if you have low blood calcium, severe kidney disease, or cannot sit or stand for 30 minutes. Stop taking Actonel and tell your doctor if you experience difficult or painful swallowing, chest pain or severe or continuing heartburn because these may be signs of serious upper digestive problems. Side effects are generally mild or moderate and may include stomach pain or upset, or constipation. Follow dosing instructions carefully.

To learn more about Actonel and osteoporosis, talk to your healthcare provider, call toll-free 1-877-Actonel, or visit www.actonel.com.

Never give up on your bones and never surrender to osteoporosis.
Act now with Actonel.

HER RESULT

Only Actonel is proven to reduce the risk of spinal fractures in the very first year.
Turn the page for additional information on Actonel and osteoporosis.

Important Information for You About Actonel and Osteoporosis

ACTONEL® (AK-toh-nel) Patient Information generic name: (risedronate sodium tablets)

This leaflet tells you about ACTONEL and how to take it. Read this information carefully before you begin taking ACTONEL. It is important to take ACTONEL exactly as recommended. Read this information each time your prescription is refilled in case new information is available. This leaflet does not take the place of discussions with your health care provider because it does not describe all the risks and benefits of ACTONEL. ACTONEL can be prescribed and dispensed only by licensed health care professionals; they have information about your medical condition and more information about ACTONEL. Talk with your health care provider about ACTONEL before you start taking the medicine and during your regular checkups.

What is the most important information I should know about ACTONEL?

Take ACTONEL once a day or as directed by your health care provider. You must take ACTONEL exactly as recommended so that it will work and to reduce the risk of harmful side effects (see ***How should I take ACTONEL?***).

What is ACTONEL?

ACTONEL is a drug to treat and prevent osteoporosis. ACTONEL can reverse bone loss and help reduce the risk of breaking bones (fractures) by stopping further loss of bone and increasing bone mass. ACTONEL is not a hormone like estrogen (hormone replacement therapy used in postmenopausal women). Therefore, it does not have all the benefits and risks of estrogen.

What is osteoporosis?

Osteoporosis is a disease that causes bones to become thinner. Thin bones can break easily. Most people think of their bones as being solid like a rock. Actually, bone is tissue, just like other parts of the body—your heart, brain, or skin, for example. Bone just happens to be a harder type of tissue. Bone is always changing. Your body keeps your bones strong and healthy by replacing old bone with new bone.

When someone has osteoporosis, the body removes more bone than it replaces. This means that bones get weaker and are more likely to break. Osteoporosis is a bone disease that is quite common, especially in older women. However, young people and men can develop osteoporosis, too.

Osteoporosis can be prevented, and with proper therapy it can be effectively managed.

How can osteoporosis affect me?

In the early stages of osteoporosis, people often have no pain or other symptoms. As bones become weaker, they are more likely to break when someone falls—or even without a fall. While osteoporosis can affect any bone, the spine, wrist, and hip are the bones most likely to break. People with osteoporosis may "shrink" (lose height), develop a curved back, or have severe back pain that forces them to limit their activities.

Who is at risk for osteoporosis?

Many things put people at risk for osteoporosis. Some are just part of who you are, like being a woman, going through menopause or already being postmenopausal, being Caucasian or Asian, being thin, or having a family history of osteoporosis. Other factors include not getting enough calcium or vitamin D, having an inactive lifestyle, smoking cigarettes, or drinking too much alcohol. Long-term use of cortisone-type medicines (such as prednisone) can also cause osteoporosis in both men and women of all ages.

Who should not take ACTONEL?

Do not take ACTONEL if you have:

- low blood calcium (hypocalcemia)
- the inability to sit or stand upright for 30 minutes
- an allergy to ACTONEL
- severe kidney disease

If you are pregnant or nursing (breast-feeding), or have severe kidney disease, talk to your health care provider before taking ACTONEL.

How should I take ACTONEL?

Take ACTONEL once daily or as directed by your health care provider. It is important to take ACTONEL as recommended so that you can benefit from the medicine. Following these recommendations also helps ACTONEL work correctly and helps you avoid possible irritation of the esophagus, the tube connecting the mouth and the stomach.

Take one ACTONEL tablet first thing in the morning while in an upright position (sitting or standing) before you have anything to eat or drink (other than plain water). Do not eat or drink anything except plain water for 30 minutes after taking ACTONEL.

Remember:

- Take one ACTONEL tablet with 6 to 8 ounces (about 1 cup) of plain water (not coffee, tea, or juice, and ***especially not milk or other dairy products***).
- After taking ACTONEL, wait at least 30 minutes before lying down. You may sit, stand, or do normal activities like read the newspaper, take a walk, etc.
- Swallow ACTONEL whole rather than chewing it or waiting for it to dissolve.
- If you take vitamins, calcium, and antacids, take them at a different time of the day from when you take ACTONEL, at least 30 minutes after you take ACTONEL.
- If you forget to take ACTONEL, do not double your next dose. Simply take ACTONEL as you normally would for your next dose.
- You should continue to take ACTONEL for as long as your health care provider recommends. ACTONEL can treat your osteoporosis or help keep you from getting osteoporosis only if you continue to take it.

What should I avoid while taking ACTONEL?

Foods and some supplements and medicines can stop your body from absorbing ACTONEL. Therefore, do not take these products at or near the time you take ACTONEL: food, milk, calcium supplements, or calcium-, aluminum-, or magnesium-containing medicines, such as antacids (see ***How should I take ACTONEL?***). Ask your health care provider if there is anything else you should avoid while taking this medicine.

What are the possible side effects of ACTONEL?

Most people have no problems with ACTONEL. However, ACTONEL may cause side effects. Side effects from ACTONEL are usually mild. They generally do not cause patients to stop taking ACTONEL.

In studies of ACTONEL in patients with osteoporosis, the most common side effects were reported about as often with ACTONEL as with placebo (sugar pill). They include upset stomach, abdominal (stomach area) pain, constipation, diarrhea, gas, and headache.

This summary does not include all the possible side effects of ACTONEL. Talk to your health care provider about possible side effects. Tell your health care provider if you feel discomfort in your stomach or esophagus (the tube connecting the mouth and the stomach). Stop taking ACTONEL and tell your health care provider right away if swallowing is difficult or painful, if you have chest pain, or if you have severe or continuing heartburn.

Other important information

How can I tell if ACTONEL is working?

ACTONEL can build bone mass in most people who take it, even though they won't be able to see or feel a difference. Your health care provider may measure the thickness (density) of your bones to check your progress. This is called a bone mineral density measurement.

What if I have other questions about ACTONEL?

If you have questions about ACTONEL, ask your health care provider or pharmacist.

If you want to read more about ACTONEL, ask your health care provider or pharmacist for the labeling written for health care professionals.

For more information, call 1-877-ACTONEL (toll-free) or visit our web site at www.actonel.com.

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A WORD A DAY

YOUR ARTICLE "WARNING: LOG-O-phil-ia *is* Addictive" by Rudolph Chelminski, in the December 2000 issue, got me to thinking. I have one friend with a dog named Phydeaux (Fido), while another named her cat after the French composer Milhaud (pronounced "mee-OH"). Meanwhile, I have decided that March 4 should be National Pun Day because its name is one (march forth).

Perhaps this all comes from my living in a city whose community festival that celebrates the annual return of spawning salmon has Ohfishals and Salmbassadors.

Karen James
Issaquah, Washington

THE TERM MONDEGREEN, MEANING A word or phrase that results from mishearing a proper word or phrase, was the inspiration of humorist Sylvia Wright. In a 1950s column, Wright confessed that when she first heard the verses "They have slain the Earl of Moray / And laid him on the green," from the Scottish folk ballad "The Bonnie Earl of Moray," she thought the lines described the double tragedy, "They have slain the Earl Amurray / And Lady Mondegreen."

Steven D. Price
New York, New York

I ENJOYED YOUR ARTICLE ABOUT ANU Garg and his Website AWAD, A Word A Day, which is found at www.wordsmith.org. As a teacher of English Composition 101, I offer my favorite mondegreen, written by a student who described a rather uppity, self-impressed young woman as "a real pre-Madonna."

Monica Fortune Hatch
Nashville, Illinois

MY FAVORITE MONDEGREEN IS "LEAD us not into Penn Station."

John Kirkpatrick
Park Forest, Illinois

YEARS AGO, SOMEONE ALLUDED TO music by "the loneliest monk," misreferring to musician Thelonious Monk.

Paul A. Peeples
Cary, North Carolina

THE PANGRAM CITED IN YOUR ARTIcle, "The quick brown fox jumped over the lazy dog's back," is long at 41 letters. The old standby can be shortened to 33 letters: "The quick brown fox jumps over lazy dogs."

Barry Schwartz
East Meadow, New York

SAINT JOHN'S BIBLE

WHAT A RELIEF TO READ "INSCRIBing the Word" by Per Ola and Emily d'Aulaire. Such a lovely concept. The new Bible is to be a joy to the world.

Dorothy Schutrumpf
Richmond, Virginia

I READ YOUR ARTICLE "INSCRIBING the Word" with interest, but phrases and thoughts throughout, such as "the first Bible to be written and illustrated entirely by hand since the invention of movable type more than 500 years ago," made me think of my own religion's tradition. You clearly were talking about the Christian Bible. In Judaism, the Torah comprises the first five books of our Bible, or what Christians call the Old Testament.

The sofer, or professional scribe, has practiced the sacred and holy art of transcribing the Torah for thousands of years, some say since the days of Moses.

Calligrapher Donald Jackson said that his greatest wish was to write the Bible, not from religious intent but

No, I didn't lay an egg. It's that harder clumping formula.
I wish you'd told me sooner. I called the newspaper.
Can I get some privacy here?
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from his "pure love of handwritten text." The sofer "labors for the love of the Lord, seeking to become a human vessel for the Divine words." Not only must the sofer achieve the proper level of holiness in his work, understanding the magnitude and sacredness of each individual letter, he must also know and understand a multitude of laws and regulations of how to write the letters and words on the parchment. Talmudic and other laws guide everything: the ritual preparation of the parchment for the scroll from the skin of a kosher animal, the ink, the quill, the letters, the words.

Even the sofer is guided by prescribed laws. A sofer spends at least a year writing approximately a quarter-million letters. Each scroll is proofread three times, and corrections to any errors must be made before the Torah can be used. Again, strict laws govern. If a mistake is made in a holy name, however, the name may not be erased: it must be removed and set aside until buried. That section of the Torah is replaced.

Melinda Hofstetter
Fairfax, Virginia

I FOUND SEVERAL MISSPELLED NAMES among Christ's ancestors on the first page of Donald Jackson's New Testament: the Hebrew letters *he* and *chet* have been written exactly the same. To the untrained eye, the letters look similar but they are not, and they are pronounced differently.

Hans H. Wellisch
Bethesda, Maryland

When Donald Jackson allowed us to look over his shoulder for our article, the Saint John's Bible was a work in progress. As artistic director of the project, Jackson strongly feels that Hebrew scripts (both Ashkenazi and Sephardic) should play an important part, where appropriate, alongside the Roman scripts throughout the Saint John's Bible. An Israeli calligrapher and adviser working in Wales, therefore, will write most of the Hebrew. Every page of text and notes, in whatever script or language, is carefully and professionally proofread twice—at layout stage in the United States and, again, after transcription by hand onto vellum in the United Kingdom—before the page is approved as complete. Mistakes such as those identified by Mr. Wellisch will be corrected. Ed.

ON YOUR DECEMBER COVER, DONALD Jackson is holding a quill and quill knife, not an ivory pointer and a quill.

Teresa Morales
Burbank, California

THE DOGS OF WAR

LIKE MOST OF YOUR ARTICLES, "THE Dogs of War" by Bruce Watson was great reading.

Although not real "war dogs" in a battle sense, other canines helped the war effort just by being there and boosting morale. A little dog named Scrounge took up with me and became my constant companion during my last months in Korea in 1952. I'm sure that little dog had done the same for some U.S. Marine before me and others after my departure.

Virgil S. Price, Lt. Col. USMCR (Ret.)
Inverness, Florida

THOUSANDS OF OUR MILITARY DOGS were needlessly destroyed in the past after their years of service to our country. Thanks to H.R. 5314, a bill mentioned in your article and signed into law by President Clinton on November 6, 2000, these dogs can now be adopted, on a dog-by-dog basis, once they are no longer needed by the military or they are unable to perform their military duties. Only military and law enforcement dog handlers and other qualified persons may adopt the dogs.

We have proved that dogs that have received attack training can be untrained. The U.S. Marine Corps had 559 dogs on hand at the end of World War II, mostly in the Pacific, and all had been attack-trained. As the chief veterinarian at the War Dog Training School at Camp Lejeune, I said that I would never sign a death certificate for a dog that could be untrained and adopted, and I never did. We successfully untrained and sent all but four of the Marine dogs back to civilian life.

Now that H.R. 5314 has become law, no more dogs will be destroyed without first being given the opportunity to be adopted. This is the least we can do to repay them for their long and honorable service.

William W. Putney, DVM
Woodland Hills, California

Among his assignments during World War II, Putney served as the commanding officer of the 3rd War Dog Platoon during the 1944 Battle of Guam, which he details in his upcoming book, *Always Faithful: A Memoir of the Marine Dogs of WWII*. Putney and other U.S. Marines began the Marine War Dog Cemetery on Guam, which had fallen into disrepair by 1989. The U.S. Navy offered a site on their base at Orote Point, and the United Doberman Club (UDC) helped raise funds to honor the deceased war dogs. The new cemetery was dedicated on July 20, 1994, the 50th anniversary of the liberation of Guam. The UDC commissioned a bronze statue representing the first war dog killed in action on Guam, a Doberman named Kurt, which rests atop a granite pedestal inscribed with the names of the other canine war heroes. Ed.

LAST YEAR THE DICKIN MEDAL FOR bravery was awarded posthumously to Gander, a Newfoundland dog. He was the first animal to be so honored since 1949. Gander was a mascot of the Royal Rifles of Canada in Hong Kong, and during the futile Battle of Lye Mun in December 1941, a Japanese soldier hurled a hand grenade toward the Canadians. Gander picked up the hand grenade in his mouth and ran back toward enemy lines with it. The explosion killed Gander, but his courage saved many of his comrades' lives.

The Dickin Medal is named for Maria Dickin, the founder of the

British charity, the People's Dispensary for Sick Animals.

Phillip Babcock
Alexandria, Virginia

AS A REENACTOR WITH THE GREAT War Association, I portray a French soldier. I was especially interested, therefore, in the photograph showing a French soldier and his dog wearing gas masks during World War I. The dog is a Bouvier des Flandres, which was commonly used by both the French and Belgian armies to pull machine-gun carts, run messages and pull litters of wounded, among other duties. My own Bouvier des Flandres participates in the reenactments and follows me into the trenches.

Michael D. Moss
Easton, Pennsylvania

SNOWSHOES

I ENJOYED RICHARD WOLKOMIR'S piece about the increasing interest in snowshoeing as a winter recreation. Some years ago while I was traveling in Norway with a group, we visited a museum devoted to farm artifacts. The exhibits ranged from complete farmhouses to snowshoes for cows.

Jean B. Ferry
Vancouver, Washington

WRITE TO SMITHSONIAN

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POINTS OF INTEREST

The Bone Collectors

A PAIR OF BIOLOGISTS ON CUMBERLAND ISLAND SAVE THE REMAINS OF DEAD SEA CRITTERS FOR OTHERS TO STUDY

BY T. EDWARD NICKENS

Carol Ruckdeschel and Robert Shoop are building one of the world's largest collections of turtle skulls, shells, eye bones and ear bones.

ON THE NORTHERN END OF CUMBERLAND ISLAND, OFF the southern coast of Georgia, just across a sandy track from the tiny First African Baptist Church—yes, the one where JFK, Jr., was married—a black vulture greets me in a cluttered compound of wooden buildings. The buzzard perches on a tall fence post, fixes me with a sooty glare and woofs twice, like a small dog. A single drop of saliva glistens from the tip of its decurved beak.

"You get to where you don't even notice them," Carol Ruckdeschel assures me, nodding toward two more of the scavengers strutting beyond a small garden. Ruckdeschel is slender and pigtailed, her braids the color of live-oak acorns. She holds a scalpel in one hand. In the other she grasps the body of a double-crested cormorant that turned up dead on Cumberland's beach. The vulture spies the corpse and shifts its weight from one foot to the other. Its time will come.

Each year, 50,000 people visit Cumberland Island National Seashore, most of them accessing what is one of the largest barrier islands on the Atlantic Coast via ferry from Saint Marys, Georgia. They come for the famous live-oak groves, deserted stretches of pristine sand and soaring dune fields. I've come for a 20- by 40-foot bare-bones plywood building, the Cumberland Island Museum. It is

ALL: GREG SMITH

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unadorned and has only one window; sitting inside, you could just as easily be in Nevada, or downtown Atlanta.

The "museum" is actually a research collection, not an exhibition for visitors. There are no public programs; in fact, getting to the Cumberland Island Museum requires a 12-mile hike, much of it through a federally designated wilderness area. But the museum has something even more valuable than the island's idyllic allure: it houses one of the world's largest collections of sea turtle skulls, shells and skeletal remains.

There are bones by the barrelful. Bones bagged and boxed and stacked ten feet high. Bones on the porch, bones in the attic. With few exceptions, they have been collected, cleaned and preserved by Ruckdeschel. She moved here in 1973, after a three-year stint as a biologist with the State of Georgia and a brush with minor fame, thanks to John McPhee's profile of her in the *New Yorker* that same year. Once a week for the past two decades, she has monitored the entire 17-mile stretch of Cumberland beach for the washed-up carcasses of turtles, marine mammals and birds. Most of the sea turtles, she believes, die in shrimper's nets. She necropsies each dead turtle, porpoise, whale and manatee; more than 1,700 in all, to date. She documents the other vertebrates she finds, too, like that double-crested cormorant the vulture eyed hungrily, and eventually ate. She picks up litter. She has driven an all-terrain vehicle the equivalent of motoring from New York to Los Angeles seven times.

As part of a study on juvenile development, Ruckdeschel measures the skull of a loggerhead turtle found on the beach. The specimen containers on the shelf above her are recycled food jars.

In the early 1980s, Ruckdeschel met Robert Shoop, a University of Rhode Island professor of biological sciences. Three years ago, he retired and moved to the island. Now they are partners in life and work, environmental activists for the national seashore, and caretakers for its dead.

The three of us step up to the museum's porch, careful not to disturb Frisbees filled with piles of fragmented shell. I trip over a bucket containing backbones. "I can't believe you're interested in all this stuff," Ruckdeschel says. We step into a small office, and then she opens an interior door.

The room is a riot of plywood shelving and secondhand cabinets. From every horizontal surface glint makeshift specimen jars containing the remains of critters and other things Ruckdeschel has found. One shelf is packed with bottles of snakes, each reptile coiled like a spring, milky-eyed. Another shelf groans with the weight of porpoise skulls. A gopher tortoise hangs suspended in a recycled Talk o' Texas okra pickles jar. A Tang bottle holds alligator hatchlings, asphyxiated in a collapsed nest.

The two biologists lead me through the catacombs, bathed in fluorescent light. "What are those?" I ask. Those, Ruckdeschel answers, are the stomach contents of birds. Here a snow goose. There a sandwich tern. Here three species of shearwater.

"And that?" A mass of parasites from the cranial sinus of a pilot whale.

The fetus of a dwarf sperm whale.

A small white egret in a large jar with a yellowed label: Spanish queen olives.

"And these?" Eye bones and ear bones of sea turtles, by the hundreds.

I am giddy, delirious, and not because of the smell of isopropyl alcohol. When I was in Mrs. Lomax's sixth-grade biology class back in High Point, North Carolina, I sat next to a floor-to-ceiling display case chockablock with specimen jars just like these. Frogs, baby opossums the size of a dime, sand sharks, bats—I spent hours gazing at their eternal poses. At home, I assembled my own collection. King snakes and bullfrogs and rhinoceros beetles. Pickle jars by the score, displayed like the Little League trophies of my pals. My mother allowed my live snakes to hibernate in the refrigerator's vegetable crisper. In those days, my life's work and play were rooted in the specimen jars of Room 106. So now, walking into the Cumberland Island Museum, I seem to glimpse a boy with his face pushed up to glass

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doors, his passion for living things sparked by things no longer alive, except in their power to inspire.

For hours, Ruckdeschel, Shoop and I ferret through Cumberland's past lives, pulling out drawers and trays filled with dainty bodies mounted on cedar sticks. But the collection's real treasure is hoarded away in the cardboard boxes that tower like canyon walls overhead. There are banana boxes, liquor boxes, tomato and peach boxes, each now burdened with brown grocery bags. Each bag holds the remains of a single turtle—skull, ear bones, humerus or femur, perhaps a piece of shell. Each bone was macerated in buckets outside, then cleaned with a toothbrush, dried in the sun and labeled. The skull plates are glued together with a water-soluble adhesive. Ruckdeschel figures it takes one full day of labor to process a single turtle. She has processed more than 600.

Among the innumerable items preserved in the museum's collection are a painted bunting and, in the plastic bag at right, the unidentified contents of a dolphin's stomach.

To study these treasures, scientists from all over the country beat a track to Cumberland, armed with data sheets and patience. One visiting graduate student spent weeks sorting through turtle-gut contents, parsing each of the 500 gallon-size bags into respective piles: moon snail, micromollusks, whelk, calico crab—two dozen categories in all. Such a database will allow researchers to look at how climatic conditions, channel dredging and other factors affect the turtles' diet. Another biologist spent ten days poring over bones as part of a research project into the Miocene sea turtles of California's Central Valley. Another studied bottle-nosed porpoise remains, trying to determine whether an offshore population could be a separate species. Ruckdeschel and Shoop recently began measuring many of the turtle skulls in their collection as part of a study on development in juveniles.

"Looking at your life, you don't know what will one day be valuable. It could be counting whiskers on worms."

"To some people, these are just bags of old bones," Ruckdeschel tells me, "and we're the weirdos who love to root in the stink. But they don't understand." Her voice trails away. She leans against a cabinet that used to house the U.S. National Tick Collection. There are days of grisly labor. Twenty-seven dead loggerheads on a single July Saturday. One afternoon in March that Ruckdeschel will never forget, she and Shoop had been on the beach since sunrise, knives in hand, bent over one corpse after another.

"The sun was going down," she says. "I was working on a turtle and looked down the beach and saw a dwarf sperm whale, barely alive, flopping in the surf." Each word is soft as wind in sea-foam. "We were just wasted. We were 20 miles from home, and we'd already had to work two other whales. But I knew what had to be done. We had to wait for the whale to die so we could do a necropsy right away. A lot of folks think this is a fun job, riding up and down the beach. But we pay our dues." She stifles a yawn with a slender hand. "Looking at your life, you don't know what will one day be valuable. It could be counting whiskers on earthworms. We just don't know. I think about that, and it makes me hate to go to sleep."

But it is late and well past bedtime. Morning comes in the middle of the night for Ruckdeschel and Shoop. They arise at 3 A.M. in order to transcribe their field notes from the previous day's work and do other writing before a new day of collecting begins. Shuffling off into the dark, they give me permission to riffle through the collection on my own while they sleep.

The next day, I ask if there's anything I can do to lend a hand. It turns out Bob has four feral horse skulls he needs to store in the attic, and I offer to do the climbing. "Better your knees than mine," he says, as I fumble around on top of a stepladder, grasping a horse skull with my thumb in the eye socket like some macabre bowling ball. I can't find the attic light switch, so I rest my rump on the floor, and let my eyes adjust to the gloom.

From the dark, a long line of horse skulls emerge, queued up on the left-hand side of the attic. Pelvic bones and vertebral columns spill out of labeled cardboard boxes. To the right, there are row upon row of loggerhead shells, leaning one against the other, like dominoes. The scutes are peeling and dried, the color of an old man's fingernails. I crab walk down the narrow aisle, but I can't begin to count them all—Shoop figures there are 75 or more. Each one labeled. Each one associated with a bag of bones in a box below. Each one the fruit of hours and hours of labor. Each one the answer to a question we don't yet know to ask.

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How Squirrels Fly

FASCINATED BY THE GRACEFUL GLIDING OF THESE MAMMALS WITH "WINGS," SCIENTISTS TAKE A CLOSE LOOK

BY MICHAEL KERNAN

With its wings of loose skin extended for maximum lift, a New World flying squirrel navigates the air in an effortless glide.

KIM TAYLOR/BRUCE COLEMAN INC.

FRANKLY, IT NEVER WOULD HAVE occurred to me to test flying squirrels in a wind tunnel. I could just see it: little furry things buffeted by the artificial gale, their tiny eyes squeezed shut as they banked and dipped and climbed in the name of scientific research.

But it's not that way at all. The cute little creatures couldn't withstand the force. Besides, they don't really fly, they glide. And it's this long, graceful gliding that's prompted a study by some scientists at the Smithsonian's Museum of Natural History.

"I was always interested in functional morphology, in the origin of primates, in how animals work," said Brian Stafford, a research associate at the museum who did his thesis on gliding mammals. "I got into flying lemurs, and that led me into research on all gliding mammals."

The purpose of using a wind tunnel to study flying squirrels—the test subjects, by the way, are models that Stafford constructs of steel and fiberglass—is to find out exactly how, in terms of physics, this gliding is done and how the squirrels' bodies work to achieve it. How are the critters able to glide 10 to 30 miles per hour?

Stafford has been working with Dick Thorington, curator of mammals at Natural History, whose interest in flying squirrels goes back at least 20

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years. The main purpose of the project is to learn more about the animals, Thorington said. "But wouldn't it be fun if we discovered something useful about how to control flight or reduce drag on small objects, such as small flying robots that could be used in aerial photography?"

In addition to flying lemurs and flying squirrels, there are a variety of other flying mammals, including marsupials like the mouse-size feather-tail glider and the sugar glider, which you can find in pet stores, and the scaly-tail flying squirrel (an African rodent that looks like a squirrel but isn't).

None of these mammals can actually fly. They develop no thrust. Nor are you going to see any of them catching a thermal and spiraling up into the sky. They're arboreal, and they use their gliding skills for sailing from tree to tree.

In the wind tunnel, Brian Stafford, left, and Dick Thorington observe a smoke stream that shows wind impact on a model of the Japanese giant flying squirrel.

Among the largest of the flying squirrels is the Japanese giant flying squirrel, which measures two feet from the top of its head to the tip of its tail, has a wingspan of more than a foot and a half and weighs up to five pounds. But some flying squirrels are no bigger than your hand. For instance, one of the two types found in North and Central America weighs a mere two to four ounces. Buff- and charcoal-colored fur, large eyes, a long flat tail and "wings" of loose skin that stretch from the forearms to the hind legs make the New World flying squirrels handsome though somewhat unusual-looking animals. They often nest in attics and eaves, though you might easily miss them because they are so tiny, nocturnal and fast.

The wing, or patagium, produces lift, enabling the squirrels to glide. When I visited Stafford at the Glenn L. Martin Wind Tunnel at the University of Maryland in College Park, he drew a series of rhombuses to show me how squirrel wings look when spread out. It's the square shape that's of particular interest to him and Thorington. Our modern aircraft design tends to be long and narrow, so they wondered how the square wings worked.

"Square wings for aircraft were investigated in the early days but didn't progress," Thorington said. "They were not as efficient as narrow designs in terms of drag."

Squirrels also have a little flap on their patagium, a sort of winglet. The scientists noticed that the winglets curl upward, like the tips on many aircraft wings. One theory is that the slant reduces drag around the end of the wing. Another is that it acts to stabilize or control the glide. Or again, as in commercial planes, it may both increase flight efficiency and help control and stabilize the glide. This theory is quite likely, since the winglet is so far from the center of gravity that it has an exaggerated effect.

In 1999 Stafford spent about two months in Japan doing research with Takeo Kawamichi, a professor who has studied the Japanese giant flying squirrel for decades. Observing the squirrels in the wild, the scientists stayed up night after night making videos and measuring the animals' speed and flight distances. Once, Stafford saw a giant squirrel at 2 A.M., or rather he saw the creature's eyes glowing in the dark. Suddenly the eyes disappeared. "Did he just close his eyes, or did he move? They're so quick and quiet you can't tell."

Coasting low and slow, the Japanese giant flying squirrel was recorded gliding for nearly 160 feet. There have been some reports of 500-foot glides, "but that was on a downhill slope," Stafford said.

Flying squirrels vary anatomically, he explained. "All have a small membrane between the neck and forelimbs, and this seems related to how they glide. Larger ones have a membrane between the hind legs. The smaller animals don't have this, but they do have featherlike tails. What is the function of that?"

These questions brought Stafford and Thorington to the wind tunnel and into collaboration with its director, Jewel Barlow, and research manager, Robert Ranzenbach. I got a tour of this remarkable device with Barlow. We entered a vast room with tilting walls. With no parallel sides or

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right angles, the facility makes for odd optical illusions. On one side, tucked at the end of a 40-foot-long pollywog-shaped structure, is the fan itself, which is 19 feet in diameter and has a 2,000-horsepower electric motor. It spins seven propeller blades modified from a B-29 bomber and can generate winds up to 230 miles per hour. Opposite the fan in a section of an enclosed tunnel circuit is the test area with an observation window.

To test wind impact, the powerful fan blasts a stream of air on objects such as aircraft, boats, cars, "anything that the wind blows on or anything that moves through water or air," Barlow told me. At this particular wind tunnel, a lot of the experiments are conducted to evaluate how various design concepts affect the aerodynamics of new cars. Using three-eighths scale models that are about six feet long, automobile manufacturers try to find out what the level of drag is for a particular design, or the degree of wind noise or debris distribution, even windshield wiper efficiency on a gusty day.

"We also conduct experiments on wind flow around buildings," Barlow added. "We measure pressure distribution on models, which helps the structural engineers design windows and glass walls."

Not long ago on TV, I saw a weatherman standing in a test chamber, chained to the steel floor, while he volubly described what it is like to stand in a hurricane. At 100 miles per hour his cheeks rippled, his ears flapped and he stopped talking.

Stafford has built life-size model squirrels of clay, fiberglass and steel rods, reproducing the exact wing shape and several levels of camber, or wing curvature.

"We're now testing steady mid-flight patterns. We don't have the data yet to study turns. The wing needs to be totally stable for this kind of testing, which is why we build the models out of steel."

While the motor is off, two staffers venture inside the fan of the wind tunnel, which can produce gusts up to 230 miles per hour at full throttle.

Stafford is creating several variations of models that will mimic the different characteristics of flying squirrels. "There are many differences. For example, we will test one model with the winglets bent upward, and another with the winglets held flat. By comparing the results of these tests we will be able to determine the function of the winglets. We will know what they do. We are building 26 different models, designed to test our hypotheses about the function of different wing structures."

As I listen to all of this, a larger question occurs to me: Why glide at all? "Gliding may save energy getting from tree to tree," Stafford said. "Predator avoidance may also be a factor. Gliding may simply be the fastest way for these animals to get from one place to another, or get to widely scattered food sources."

Looking for answers, Stafford has been videotaping local gray squirrels—the non-gliders—in the wild to compare their behavior with that of gliders.

Being nocturnal, flying squirrels must have good eyesight, he said. "Even so, they often triangulate distance. You can see how their heads bob just before they take off."

The flying squirrel's eyes are off to the sides of the head so the animal can spot attackers coming from any direction. But this fact, plus the small size of the head, does not make for great depth perception. That's why the intended flight path has to be checked out from several angles to establish a workable parallax.

Sometimes a squirrel will drop like a stone for a few frightening yards after takeoff to gain speed. It turns by lowering one arm, just like a kid playing pilot.

I thought it must be exciting to watch a creature seemingly in the middle of an evolutionary change, and I wanted to know where all this was leading: Would squirrels someday fill the sky like birds?

Stafford had to smile. "Evolution is not necessarily directional. There are all kinds of gliding animals—mammals, lizards, fish—but their development isn't necessarily going anywhere. Gliding may be an end in itself."

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AT HAND

Reaching Toward Space

HIS 1935 ROCKET WAS A TECHNOLOGICAL TOUR DE FORCE, BUT ROBERT H. GODDARD HID IT FROM HISTORY

BY TOM D. CROUCH

THE SPACE AGE ARRIVED ON THE doorstep of the Smithsonian Institution in the first week of November 1935. It came in the form of a rocket, carefully packed in a long wooden crate, looking more sleek and streamlined than the sputtering craft that would carry Flash Gordon and Dale Arden to the planet Mongo and back at the local Bijou every Saturday afternoon. Measuring 15.375 feet long, 9 inches in diameter and 21.5 inches across the fins, it was covered with a shiny aluminum and stainless steel skin, one quadrant painted red.

The donor, Robert Hutchings Goddard, had consigned his creation to an express company in Roswell, New Mexico, on November 2. "The rocket has been greased inside and out," he explained to Smithsonian officials, "and the nozzle plugged with a shellacked cork." He went on to insist that under no circumstances was his rocket to be exhibited, or even shown, without his permission. Having agreed to those conditions, Frank A. Taylor, curator of the Division of Engineering, reported on November 16 that the new acquisition had been moved into deep storage in a basement corridor of the Smithsonian Castle. There it would remain for more than a decade.

Three of Goddard's assistants position one of his A series rockets in a launch tower at his Roswell, New Mexico, test facility, February 16, 1935.

Robert Goddard's long relationship with the Smithsonian had begun in 1917, when the Institution had provided the young Clark University physics professor with a $5,000 grant to support his earliest experiments in rocketry. Charles G. Abbot, then director of the Smithsonian Astrophysical Observatory, was intrigued by Goddard's suggestion that rockets could boost scientific instruments into the upper atmosphere.

No one was more pleased than Goddard's mother. "I think that's the most wonderful thing I ever heard of," she remarked. "Think of it! You send the Government some typewritten sheets and some pictures, and they send you $1,000, and tell you they are going to send four more."

The Smithsonian published Goddard's classic treatise on rocketry, *A Method of Reaching Extreme Altitudes*, in 1919. The document was a serious engineering study filled with equations and tabular data designed to prove that existing solid-propellant rockets could carry instruments into space. Though the paper concluded with a remark that it might even be possible to send a multistage rocket to the moon, the author did his best to understate the more sensational aspects of his study.

Goddard's valiant efforts to preserve his scientific dignity were a dismal failure. The shy professor and his "moon-going rocket" were front-page news from the *New York Times* to the *San Francisco Examiner*. A Hollywood agent cabled a request:

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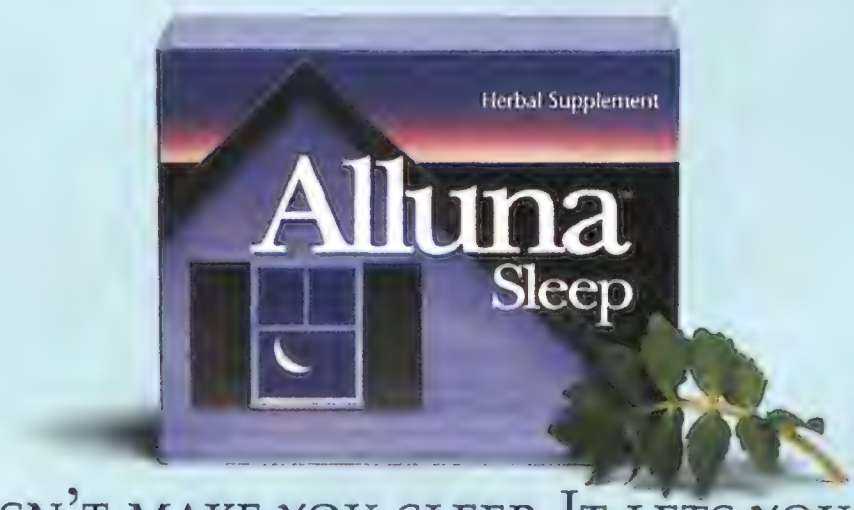

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Burned, Goddard retreated from the limelight and continued his work in relative secrecy. He achieved a genuine milestone on March 16, 1926, when he sent the world's first liquid-propellant rocket sputtering aloft to a peak altitude of 41 feet above a Massachusetts cabbage patch. He continued to build, static test, and launch his rockets for the next three years, gaining useful experience in the design and construction of the bits and pieces that make up a rocket.

The steady, comfortable pace of his research was broken on July 17, 1929, when a new rocket left the launch tower with its usual roar and reached an altitude twice as high as that achieved in 1926. As Goddard and his crew were packing up that afternoon, a police car and an ambulance, summoned by neighbors who had been frightened by the noise, appeared on the scene. Goddard was back in the news once more and, in effect, barred from flying his rockets in the area.

But this short-term disappointment opened the door to Goddard's most fruitful years. He was sitting at his desk on the afternoon of November 22, 1929, when he received a telephone call from the most famous man in America, Charles A. Lindbergh. The flier had noticed an article in the latest issue of *Popular Science Monthly* detailing Goddard's work.

The two arranged a meeting the next day. By the end of his visit, Lindbergh's limited interest had given way to a much grander vision. "I am sure Professor Goddard had no idea how his words set my mind to spinning," the aviator recalled in his autobiography. "A flight to the moon theoretically possible! . . . Who dared, now, to say anything was impossible!"

Lindbergh communicated his enthusiasm to his friend Harry Guggenheim, son of philanthropist Daniel Guggenheim, who agreed to provide an initial grant of $50,000 to support the effort. Before the project was over, the Guggenheims would spend some $188,500 on Goddard's work.

The grant enabled Goddard to devote his full attention to rocketry. At the suggestion of a meteorologist, he selected the isolated high-plateau country around Roswell, New Mexico, as the ideal site for testing high-altitude rockets.

In the desert, Goddard could insulate himself from the pressures and the perceived dangers of the outside world. Concerned that rocket builders in other parts of the nation and the world would make use of his work before he could achieve extreme altitudes and publish his research, he trusted no one outside his tiny circle of assistants. Rocketeers all over the world knew his name, but none of them knew much about his technology, or precisely what he had accomplished.

By the spring of 1935, Goddard was concentrating on the development of a gyroscopic control system. "Last

Launched on August 26, 1937, to test a steering system, a rocket similar to the one sent by Goddard to the Smithsonian in 1935 roars skyward from the New Mexico desert.

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On September 23, 1945, Goddard, center, poses in front of a rocket with, left to right, A. W. Kisk, Harry F. Guggenheim, Charles A. Lindbergh and N. T. Ljungquist.

Friday we had the best flight we have ever had during the entire research," he reported in a letter to Clark's president. Still, progress was slow.

At Goddard's invitation, Lindbergh and Harry Guggenheim flew into Roswell on September 22, 1935, hoping to observe a flight. Two trips to the test area resulted in nothing more than a pair of abortive launches. Goddard, Lindbergh recalled, "was as mortified as a parent whose child misbehaves in front of company."

Before leaving Roswell, Lindbergh and Guggenheim urged Goddard to publish a report on his latest experiments and to ensure the preservation of his technology by presenting one of his recent rockets to a museum. After their departure, Goddard wrote to his old friend Charles G. Abbot, now serving as Secretary of the Smithsonian, offering to prepare another report for publication by the Institution and to deposit "one of the complete rockets that we have used in the stabilization development."

Goddard's workmen spent the next several days reassembling a typical A series vehicle from parts of several surviving rockets, likely including A-5, which had been flown on March 28. "The greatest height reached by these rockets," Goddard wrote, "was somewhat over a mile, and the greatest speed in flight over 700 miles per hour." On November 2, the rocket began its journey to long-term storage at the Smithsonian. There it would remain until after World War II, when it would finally be displayed in the World War I temporary building, the "tin shed" housing many objects that would form the heart of the National Air Museum collection.

The professor and his wife left Roswell in 1942 to work with U.S. Navy and Curtiss-Wright engineers on the development of rocket-assisted takeoff and variable-thrust, liquid-propellant rockets. He died of throat cancer in August 1945, still dreaming of reaching the extreme altitudes.

Goddard was largely forgotten during the flurry of excitement over the German V-2 rocket and the postwar high-altitude rocket tests at White Sands, New Mexico, not very far from Roswell. But the neglect was about to change. The Guggenheims funded a large museum display of Goddard technology, the contents of which eventually entered the Smithsonian collections. The post-Sputnik drive to honor the American rocket pioneer reached its peak when the National Aeronautics and Space Administration opened the Goddard Space Flight Center in Greenbelt, Maryland, in 1959, and the United States government awarded $1 million to the Guggenheim Foundation and Mrs. Goddard for the use of Goddard patents in 1960.

Today, the Goddard A series rocket is in storage, but present plans call for its display at the National Air and Space Museum's Steven F. Udvar-Hazy Center, scheduled to open at Washington Dulles International Airport in 2003. Three other Goddard rockets can be seen at the Air and Space Museum on the Mall.

The brilliant Theodore von Kármán, professor of engineering at Cal Tech, once remarked that there was no direct line from Goddard to modern rocketry. "He is on a branch that died. . . . If he had taken others into his confidence, I think he would have developed workable high-altitude rockets and his achievements would have been greater than they were."

As Charles Lindbergh recognized, however, there are other ways to gauge the achievements of an individual human spirit. "When I see a rocket rising from its pad," Lindbergh wrote in 1974, "I think of how the most fantastic dreams come true, of how dreams have formed into matter and matter into dreams. Then I sense Goddard standing at my side, his human physical substance now ethereal, his dreams substantive. . . . What sunbound astronaut's experience can equal that of Robert Goddard, whose body stayed on earth while he voyaged through galaxies?"

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The Elemental Sparks

SMITHSONIAN HIGHLIGHTS

"DOES IT SEEM, I SAY, ALL BUT A MIRACLE of art, that the thoughts of living men . . . should clothe themselves with elemental sparks and shoot with fiery speed . . . through the oozy dungeons of the rayless deep." Those prescient words of orator Edward Everett, spoken when global communication was but a spark of an idea, describe a risky venture to lay a slender cable of copper telegraph wire across the floor of the Atlantic Ocean and connect Europe with America. The task was extremely difficult because no venture of this size, covering such a distance, had ever been attempted. Above, the crew of the 3,200-ton HMS *Agamemnon*, which laid the first, briefly successful cable in 1858, watches anxiously, knowing that the mere wake of a passing whale might be forceful enough to break the cable. Success would depend in part on the mighty 22,000-ton *Great Eastern*, which could house the miles of cable in its immense hold. Looking at that era, as does the new exhibition *The Underwater Web: Cabling the Seas*, organized by the Smithsonian Institution Libraries and curated by Bernard Finn of the National Museum of American History (NMAH), a wealth of ironies can be found. Consider that while the telegraph brought together nations, it did so at the expense of operators, isolated in remote stations like Hearts Content, Newfoundland, far from where the cable might be damaged by ships' anchors. Opening March 23 at NMAH, the show includes illustrations from the rare books in the Dibner Library of the History of Science and Technology in celebration of the Dibner's 25th anniversary. —*Beth Py-Lieberman*

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SMITHSONIAN HIGHLIGHTS

William Kentridge

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An exhibition of one of South Africa's most versatile artists, William Kentridge, opens February 28 at the Hirshhorn. Kentridge's works, what he calls "drawings for projection," are short animations of black-and-white charcoal drawings that Kentridge films while he draws and erases them. The exhibition, which launches a national tour, includes 13 films, paired with completed drawings featured in the films. Additional works will also be on view. The exhibition is co-organized by the New Museum of Contemporary Art, New York, and the Museum of Contemporary Art, Chicago, which will host the show in the summer and fall of 2001, respectively, before it moves on to Houston, Los Angeles and Cape Town, South Africa.

Jazz Singers

A SMITHSONIAN PRODUCTION: TOLD AND SUNG BY THE ARTISTS

Smithsonian Productions presents a new radio series entitled *Jazz Singers*, an exploration of the history of vocal jazz in America. Hosted by Al Jarreau, the 13 hours of programming offer a delightful mixture of stories, music and rare audio recordings of conversations with some of the earliest artists in the genre. The program features guest appearances by such contemporary vocalists as Bobby McFerrin, Jon Hendricks, Dakota Staton and Diana Krall. Check your local public radio listings for times.

Smithsonian Website

WWW.SMITHSONIANMAG.SI.EDU

At the Magazine's homepage, click on "Events" to go to the calendar and view on-line versions of Smithsonian exhibitions and activities. Here you can also view a few more images from the exhibition *The Underwater Web: Cabling the Seas* (p. 44).

Exhibitions and Events

NATIONAL MUSEUM OF AFRICAN ART

Encounters with the Contemporary (through January 6, 2002) Works by 32 important African modernists.
Chant Avedissian: A Contemporary Artist of Egypt (through February 19) A series of panels depicting current and historical images of political figures and everyday objects.

ARTS AND INDUSTRIES BUILDING

When the Spirit Moves: African American Dance in History and Art (through June 1) Historical artifacts and works of art show how key characteristics of African dance have come to influence American dance.
Santos: Substance & Soul (through March 31) Features some 40 Latin American devotional santos, in a show organized by the Smithsonian Center for Materials Research and Education to explain the science of museum conservation.

DISCOVERY THEATER

A season of performances for young and old, sponsored by the Smithsonian Associates. Call 202-357-1500 (voice or TTY) weekdays, 8 A.M.-4 P.M.

NATIONAL MUSEUM OF AMERICAN HISTORY

The American Presidency: A Glorious Burden (new permanent exhibition) Nearly 1,000 objects associated with the nation's highest office. Tickets required; for more information, call 202-786-2122.
Fast Attacks and Boomers: Submarines in the Cold War (through April 2003) Graphics and interactives tell about the role these vessels played in American policy during this period.

NATIONAL MUSEUM OF NATURAL HISTORY

Buccellati: Art in Gold, Silver and Gems (through February 25) Works from the Italian jewelry and design firm.

NATIONAL AIR AND SPACE MUSEUM

Pioneers of Flight and *Milestones of Flight* are closed for renovation through July. The Wright brothers' *Flyer*, the

Planning a Smithsonian Visit?

To receive a free Associates planning packet, write to Smithsonian Information, Smithsonian Institution, Washington, D.C. 20560-0010, or send your request via e-mail to info@info.si.edu, or call 202-357-2700 (voice) or 202-357-1729 (TTY), 9 A.M.-5 P.M., Monday-Friday; 10 A.M.-4 P.M., Saturday-Sunday, or visit www.si.edu. Note: Museums are generally open 10 A.M.-5:30 P.M. daily, except December 25. Parking is limited; Metrorail is convenient to most museums.

THE CASTLE—INFORMATION CENTER

Make your first stop the Castle's Smithsonian Information Center. At the Associates Reception Desk, open 9 A.M.-4 P.M. daily, learn what's new at the Smithsonian and about other area attractions. Receive brochures, hear about your discount privileges and register for a Sunday morning member's tour of the Castle. The Commons restaurant will be closed February 12-16.

Spirit of St. Louis, the *Viking Lander* and the moon rock will, however, remain on view.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

Directions—Dana Hoey (through February 19) Lush, colorful images, mostly of women, by this New York artist.
The Collection in Context: Horace Pippin's "Holy Mountain III" (through March 5) A painting portraying a Biblical vision of peace by the self-taught African-American artist.

ARTHUR M. SACKLER GALLERY

Persepolis: Documenting an Ancient Iranian Capital, 1923-1935 (through May 6) Archaeological materials, drawings and photographs from the excavation of the Persian city.
India Through the Lens: Photography 1840-1911 (through March 25) Rich images of India's architecture, landscape and people.

FREER GALLERY OF ART

Storage Jars of Asia (through March 10, 2002) Large jars made between the 8th century B.C. and the 18th century.

GEORGE GUSTAV HEYE CENTER, NATIONAL MUSEUM OF THE AMERICAN INDIAN [NEW YORK CITY]

Beauty, Honor, and Tradition: The Legacy of Plains Indian Shirts (through November 4) Insight into the symbolic meaning of 49 exquisitely crafted shirts painted and adorned with beads, porcupine quills and ribbon.

NATIONAL ZOOLOGICAL PARK

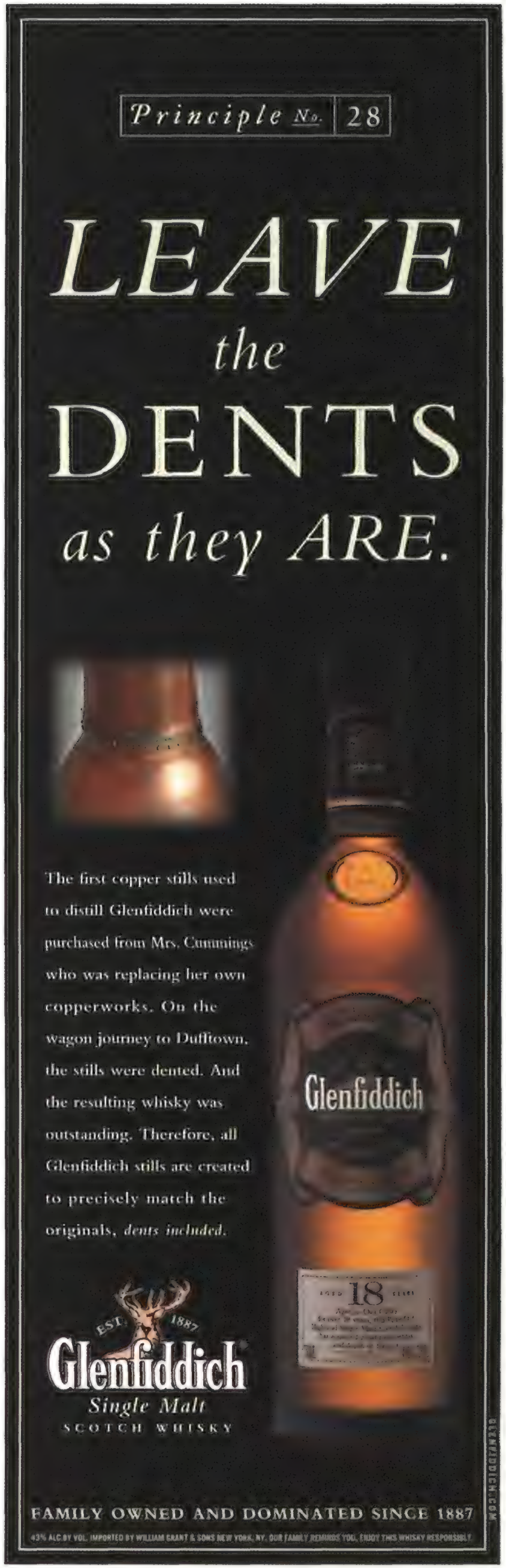
The Giant Pandas (new permanent exhibition) The Zoo's new giant pandas, Mei Xiang and Tian Tian, are now entertaining visitors after their much-anticipated arrival from China on December 6. To view live video of the pandas, go to pandas.si.edu.
How Do You Zoo? (new permanent exhibition) A play-and-learn experience for children who like to pretend they work at the Zoo. Open to school groups, kindergarten through fifth grades, Monday through Friday, and to the public on weekends, from 10 A.M. to 4 P.M. To schedule a school group, call 202-673-4955.

COOPER-HEWITT, NATIONAL DESIGN MUSEUM [NEW YORK CITY]

The Opulent Eye of Alexander Girard (through March 18) A retrospective of works by the designer and architect who helped define the "look" of the 1960s.

CLOSED FOR RENOVATIONS

The Smithsonian American Art Museum and the National Portrait Gallery are closed to the public for the next three years. The Anacostia Museum will reopen this summer.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For Some, Pain Is Orange

PERSONS WITH SYNESTHESIA EXPERIENCE "EXTRA" SENSATIONS. THE LETTER *T* MAY BE NAVY BLUE; A SOUND CAN TASTE LIKE PICKLES

BY SUSAN HORNIK

PHOTOGRAPHS BY KAY CHERNUSH

Carol Crane, synesthete and researcher, seeks on a color wheel the blue of her number 2.

WHEN NEW YORK ARTIST Carol Steen was 7 and learning to read, she exclaimed to a classmate as they walked home from school, "Isn't *A* the prettiest pink you've ever seen?" Her little chum responded with a withering look. "You're weird," she said.

Shabana Tajwar was a bit older when she discovered that her world was more colorful than most. In 1991, as a 20-year-old intern, she and a group of friends were trying to remember someone's name over lunch. "I knew the name was green. It started with *F* and *F* is green," says Tajwar, now an environmental engineer. "But when I mentioned that, everyone said, 'What are you talking about?'" She shrugs. "I was sort of in shock. I didn't know everyone didn't see things the same way."

While most of us experience the world through orderly, segregated senses, for some people two or more sensations are commingled. For Steen and Tajwar, hearing a name or seeing a letter or word in black and white causes an involuntary sensation of color. To Tajwar the letter *T* is always navy blue. "I don't see the actual letter as colored," she says. "I see the color flash, sort of in my mind's eye." Steen not only delights in pink *A*'s and gold *Y*'s, she experiences colored taste as well. "I see the most brilliant blue after I eat a salty pretzel," she says.

Others with synesthesia—from the Greek *syn*, meaning together, and *aisthesis*, perception—may feel or taste sounds, or hear or taste shapes. The chords of a strumming guitar may be a soft brushing sensation at the back of an ankle, a musical note may taste like pickles, a trumpet may sound "pointed," the taste of chicken may feel "round." A teenager once confessed that her boyfriend's kiss made her see "orange-sherbet foam."

Even more baffling to outsiders: while synesthetes' perceptions are consistent over time, they are not shared. Letters, for instance, don't evoke the same color for everyone. Steen jokes that her good friend and fellow synesthete Patricia Duffy is "great" but misguided. "She thinks *L* is pale yellow, not black with blue highlights," says Steen with a grin, as she pours a mug full of coffee in her downtown New York loft. Separately, over lunch in a sunny bistro, Duffy, a lan-

guage instructor at the United Nations, confides, "Some of Carol's colors are so wrong!"

Even relatives who have synesthesia—it seems to run in families—see things differently. The Russian novelist Vladimir Nabokov tells in his memoirs about playing with a set of wooden blocks when he was 7 years old. He complained to his mother that the letters on the blocks weren't the right colors. She was sympathetic. She, too, objected to the shades—though she also disagreed with some of her son's color choices. According to one study, only one letter elicits consensus among a majority of synesthetes; apparently some 56 percent see O as a shade of white. For Nabokov, it radiated the hue of an "ivory-backed hand-mirror."

People with synesthesia have described their unusual perceptions to intrigued but baffled researchers for more than 200 years. At times they were viewed as mentally defective, at other times idealized as artistically gifted. Often, they weren't believed at all. Only in the past decade or so, using controlled studies, in-depth interviews and computer-aided visual tests, have scientists begun to identify and catalog the staggering variety of these automatically induced sensations. "We've gone to great lengths to identify the range of forms," says Peter Grossenbacher, a cognitive neuroscientist and one of the foremost U.S. researchers on synesthesia. "We understand it's a real experience. But we don't yet know how it comes to pass."

Already, scientists have discovered that synesthetes frequently have more than one form of the trait. Carol Steen's tall-windowed loft—part living space, part art studio—is jammed with her synesthesia-inspired paintings and sculptural models. Pulling letters painted on business-card-size pieces of paper off a shelf, she struggles to make clear the unique sensations that color her life and work. "It's like viewing the world in multimedia," she says. "I want to show other people what I'm seeing."

What Steen is seeing is not only color triggered by certain sounds, smells and flavors; when listening to music, she also sees shapes, which are reflected in her sculpture.

Steen also feels pain in color. When on vacation in British Columbia two years ago, she jumped down from a rock and tore a ligament. "All I saw was orange," she says. "It was like wearing orange sunglasses." In her paintings she depicts similar color sensations that she experiences during acupuncture. One abstract oil shows a green slash arcing through a field of red; in another a tiny red triangle drifts off into the distance on a sea of bright blue.

Researcher Peter Grossenbacher and a small cadre of scientists in this country, the United Kingdom, Canada, Germany and elsewhere are currently doing research with volunteers to try to figure out why Steen sees orange when the rest of us just ache. So far, they agree

Cognitive neuroscientist Peter Grossenbacher sits outside colorful meditation rooms at Naropa University. Superimposed on the picture is his concept of the paths of synesthetic perception.

that synesthesia is more common in women than in men and is an international phenomenon. Grossenbacher primarily employs sophisticated screening and interviewing methods. Others, bolstered by dramatic advances in imaging techniques, are observing the neural activity of synesthetes and measuring the unique ways their brains respond to stimuli. In the process, they are shedding light on how we all perceive the world around us.

"It's the only way I know of perceiving," Steen points out. "If someone said they were going to take it away, it would be like saying they were going to cut off my leg." Although Steen delights in exploring her sensations, others remain ambivalent. When she was 20 and eating dinner with her family, Steen mentioned that the number 5 was yellow. "No," her father said. "It's yellow ocher."

But after that evening, he refused to discuss it again.

Such embarrassment used to be the norm. In 1812, Dr. G.T.L. Sachs published the first scientific treatise on synesthesia. In it, he described how he and his sister experienced vivid color sensations when seeing, hearing or even thinking about various vowels, consonants, names and numbers. For the next 70 years, the only synesthetes to describe their symptoms publicly were doctors and researchers whose curiosity about their conditions outweighed their fear of being ridiculed or labeled insane.

Despite the obvious intelligence of the physician witnesses, most researchers viewed synesthesia as an illness. In 1864 Ernest Chabalier, a French doctor, described how a friend, who was also a physician, saw colors when he heard vowels, numbers, time periods and proper names. But Chabalier thought it significant that his friend had suffered hallucinations as a child. A decade later, when Dr. Jean Nussbaumer of Vienna vividly described his own and his brother's colored hearing, another Austrian physician suggested not too tactfully that the Nussbaumers were mentally unbalanced. Only in the late 1870s did George Henry Lewes offer a more sympathetic portrayal, comparing the twinned sensations of synesthetes to his own feeling of a chill in his legs when he witnessed an unpleasant sight.

Grossenbacher, who has studied synesthesia for the past seven years, says that for many of the dozens of people he and a team at the National Institutes of Health (NIH) have interviewed, "synesthesia doesn't present a problem, but in the back of their minds, some worry that they're mentally ill." In fact, synesthetes appear to be perfectly normal in every other way. Some even appear to have above average ability in recalling information, leading Grossenbacher and others to begin researching synesthesia's effect on memory.

Tajwar says synesthesia makes it easier for her to remember things like names. "When I meet someone, their name is a color, so I'll always associate that color with them," she says. (My nickname is Sue, which she says is "white"—primarily because the first letter, *S*, is white.) Michael Torke, a New York composer who associates colors with both letters and musical keys, also admits that synesthesia can serve as a memory aid.

In the 1980s Torke wrote a series of compositions inspired by synesthesia—including "Bright Blue Music," written in D major: "Green," written in E major; and "Ecstatic Orange," "Yellow Page," "Purple," "Rust" and others—all named for the shades Torke found himself "swimming in" when composing pieces in particular keys. The artist David Hockney has used synesthesia in his work as well—to paint the colors of music that he was listening to at the time. When designing sets for the Metropolitan Opera, he would listen to music and, inspired by the colors, paint the sets accordingly. "When it came time to paint the tree for Ravel," he told Richard Cytowic, a Washington, D.C. neurologist, "I put on the tree music for the opera, and it had a certain weight and color. The music would dictate the shape."

But for Torke, synesthesia became a mixed blessing. "The colors became all anyone wanted to talk or write about. I started to resent it."

Blame the cultural world's giddy love affair with "colored hearing" (and the notion that synesthetes are more artistically attuned), in part, on the French poet Arthur Rimbaud. In 1871 his sonnet "Voyelles" turned a medical curiosity and a seeming scientific rarity into an international cultural craze. "*A* black, *E* white, *I* red, *U* green, *O*

In his 1910 symphony Prometheus, Alexander Scriabin tried to meld music and color.

blue . . . ," read Rimbaud's much-debated verse. The idea of a melding of the senses fit perfectly with the Romantic view of the unity of man and nature. Overnight the fusion of color and sound showed up in Symbolist poetry, fin de siècle English literature, and French and Russian theater and music.

American painter James McNeill Whistler said art should "appeal to the artistic sense of eye or ear." He titled the famous painting of his mother, *Arrangement in Black and Grey No. 1*, as though it were a musical composition. Russian abstract painter Wassily Kandinsky would later proclaim that for synesthetes, colors "call forth a vibration of the soul" like a violin at the touch of a bow.

In the decades surrounding the turn of the century,

Patricia Duffy has distinct colors for the days of her week. Here she steps from a yellow Wednesday to a turquoise Thursday.

synesthetes came out of the closet and pseudo-synesthetes came out of the woodwork. Among the literati, having synesthesia became the yardstick for measuring an artist's genius. One enthusiast raved, "Color hearing marks for us a true progress in the perfection of our senses."

The fad reached a high-water mark of sorts with Russian composer Alexander Scriabin, a purported synesthete. In his 1910 symphony *Prometheus,* he ambitiously tried to meld music and color through the use of a mute "light organ" with which he intended to paint the concert hall with colored light in the form of beams, clouds and other shapes. It proved technically impossible at the time. When finally attempted at Carnegie Hall on March 20, 1915, only "a white sheet at the back of the platform . . . was illuminated by streaks and spots of light of various colors," according to a critic who was dismissive of any meaningful connection between the colors and the music.

Regardless, the faddishness of synesthesia had already fostered a flurry of scientific interest—not least because doctors suddenly had hundreds of self-confessed synesthetes willing to be interviewed. In 1893 some 26 articles were published on the phenomenon. But researchers had no way to differentiate between pretenders and true synesthetes. How could they identify—never mind study—a seemingly subjective experience? Largely abandoned by scientists, synesthesia increasingly became identified with decadent swooning artists, turbaned Spiritualists and, more recently, with LSD-enhanced psychedelic love-ins.

Battling those stereotypes, researchers have spent the past decade or so gathering tantalizing clues about the cluster of traits and brain anomalies that make up synesthesia. Thanks to their efforts, few now doubt that the phenomenon exists. "It's gone from complete disbelief to less of a disbelief," says Richard Cytowic, whose research and popular book, *The Man Who Tasted Shapes*, are credited with helping spark the current renewed interest in synesthesia. "People are aware now of the amazing things happening inside the brain, so this is less strange."

Carol Steen can remember the precise hour—one o'clock on August 31, 1993—when she heard Cytowic talking on National Public Radio about synesthesia as a real condition. "I burst into tears," Steen says. "I was no longer alone." She immediately got in touch with him. "I had so many questions. In a 20-minute phone call, I barely let him get a whole sentence out," says Steen (who has talked with Cytowic many times since). "That day changed my life."

On a steamy August afternoon at the NIH campus in Bethesda, Maryland, Peter Grossenbacher is drawing a web of circles and lines on a blackboard. There are several tentative theories about why synesthesia happens: one sug-

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SEVEN SEAS MARINER ◻ SEVEN SEAS NAVIGATOR ◻ RADISSON DIAMOND ◻ SONG OF FLOWER ◻ PAUL GAUGUIN

Environmental engineer Shabana Tajwar envisions a colorful calendar year surrounding her midriff, like a clock.

gests that all infants may have it until about 6 months, but normally, as their brains develop and multisensory linkages die, their responses become segregated.

Grossenbacher offers a slightly different view. In all brains, he says, input goes from single-sense modules (he chalks in little circles representing hearing and sight on a blackboard) along a pathway into a multisensory region (a large circle that he draws with a flourish). There are also pathways leading back again, but for most of us those backward routes are inhibited. Grossenbacher thinks synesthetes may have an unusually strong feedback mechanism. Hallucinogenic drugs can produce synesthesia artificially, suggesting, in Grossenbacher's opinion, that we all have the feedback connections that make synesthesia possible. "The connections are normal," he conjectures. "They're just abnormal in the way they're used.

"We know synesthesia does happen," Grossenbacher says, "but scientists can't study the phenomenon without having ways of determining whether a particular person actually experiences it." Using a specially designed computer program with extremely specific color choice, the NIH team can precisely test the consistency of a synes-

thete's selections over time. Sitting at a computer in a white-walled windowless booth, Grossenbacher's colleague Carol Crane, a psychologist and synesthete, is staring at a color wheel on the screen and painstakingly selecting the precise shade and brightness of blue to match her number 2. "The first time I did this it was agonizing trying to find the exact color," says Crane. "I was so afraid there wouldn't be a color to match."

This intensity of association of a letter or word with a particular shade is a hallmark of "colored-language" synesthesia. "It's not enough to say it's orange," says Pat Duffy of her tangerine *A*. Her *G* is not just black, but black with glints of gold, and *Z* is a brownish black with bubbles. The initial letter of a word usually gives a cast to the entire word—but there are glints of the other letters. "It's like looking at a vase from a distance and thinking it's one color," says Duffy, "but when you're close-up you see it's really multicolored."

Reading a page of print, explains Carol Steen, can be like looking at a mosaic. "I 'see' the printed letter in black, or whatever color it's printed in," she says. "But I also see an overlay of my colors for those letters." Spoken words have the same colors as the words in print, but for some, the tone of a person's voice can add its own hues to the mix.

Accompanying the high degree of exactness is the consistency of the color choice over time. Dr. Simon Baron-Cohen, a psychologist at Cambridge University and the leading British researcher, conducted a landmark study in 1993 that convinced many skeptics of synesthesia's existence. He asked a group of colored-language synesthetes, and a control group, to describe the color or shape elicited by a list of 100 spoken words. Even a year and a half later, synesthetes gave the same answers 92 percent of the time. A week after the initial test, the group of nonsynesthetes had an accuracy rate of only 37 percent.

Sitting in a noisy café in the Chelsea section of New York City, Pat Duffy, a petite and graceful 48 year old, bristles at the thought of one of her numbers changing color. "It never changes," she insists, as she spears a lettuce leaf. "It can't. Can the shape of V change?"

Using Positron Emission Tomography (a PET scan), which shows patterns of cerebral blood flow and thus indicates neural activity, Baron-Cohen and his colleagues scanned the brains of synesthetes who link colors to spoken words. They also tested a control group. When the blindfolded volunteers listened to a tape of recorded words, they all showed activity in the language areas of their brains. But only in synesthetes did blood flow soar in areas of the visual cortex associated with such tasks as sorting images based on color. The implication is that "visual" information was being processed in the brains of synesthetes, even though they hadn't seen anything. Recently, those results were confirmed using functional Magnetic Resonance Imaging (fMRI), a newer technique for detecting changes in cerebral blood flow.

Many colored-language synesthetes share yet another "visual" aberration—a very concrete perception of time, numbers and the alphabet. Duffy has what she calls an "internal calendar," or "time landscape." When she wakes up in the morning thinking about the day or week ahead, she automatically sees a pathway of colored rectangles. Tuesday is dark blue. Her alphabet is a string of letters gradually sloping uphill. "I glide up the alphabet trail till I get the letter I need," she explains. Torke insists, "Numbers are like mountain peaks and valleys. At 20, there's a sharp turn to the right. At 100, they turn left."

A recent Canadian study of a synesthete doing arithmetic suggests how innate and spontaneous these traits are. Not just the sight of a number but the mere concept of a number can trigger color. When the subject was shown a math problem such as 5 + 2 =, followed by a patch of yellow (the color that corresponds to her number 7), she named the color and number faster than the control subjects. But when she was shown the "wrong" color as an answer, she took significantly longer than the control group to respond.

Depending on the circumstance, her color cue could be an aid or a hindrance. Such a strong association between colors and letters or numbers can easily cause confusion. Once when navigating Prague's subway system, Duffy saw that the A line was green and the B line yellow but found herself getting on the wrong line because they were nearly the reverse of her colors. "If the color coding doesn't match mine, it's a problem," she says. Admits Tajwar, "Because a numeral 2 and letter *S* are similar whites, I sometimes write 2 instead of *S* by mistake."

Artist Carol Steen captures the colors and shapes she sees while listening to music or receiving acupuncture. Here for the camera she paints with light to express her perceptions.

When Carol Steen stubbed her toe recently and let out a yelp, her husband dashed out of the bedroom to see what was wrong. It took a few moments for her to explain what had happened. "The first word out of my mouth was 'orange!'" she says, "then I managed to tell him I'd hurt my toe."

At times, all the additional stimuli can be distracting. Carol Steen laughs that she gets easily sidetracked when looking up a word in the dictionary. "I end up looking at all the colors," she says. Her friend Pat Duffy sometimes feels slightly overloaded. Duffy, who is currently working on a book about synesthesia, says: "I can't listen to music when I'm writing."

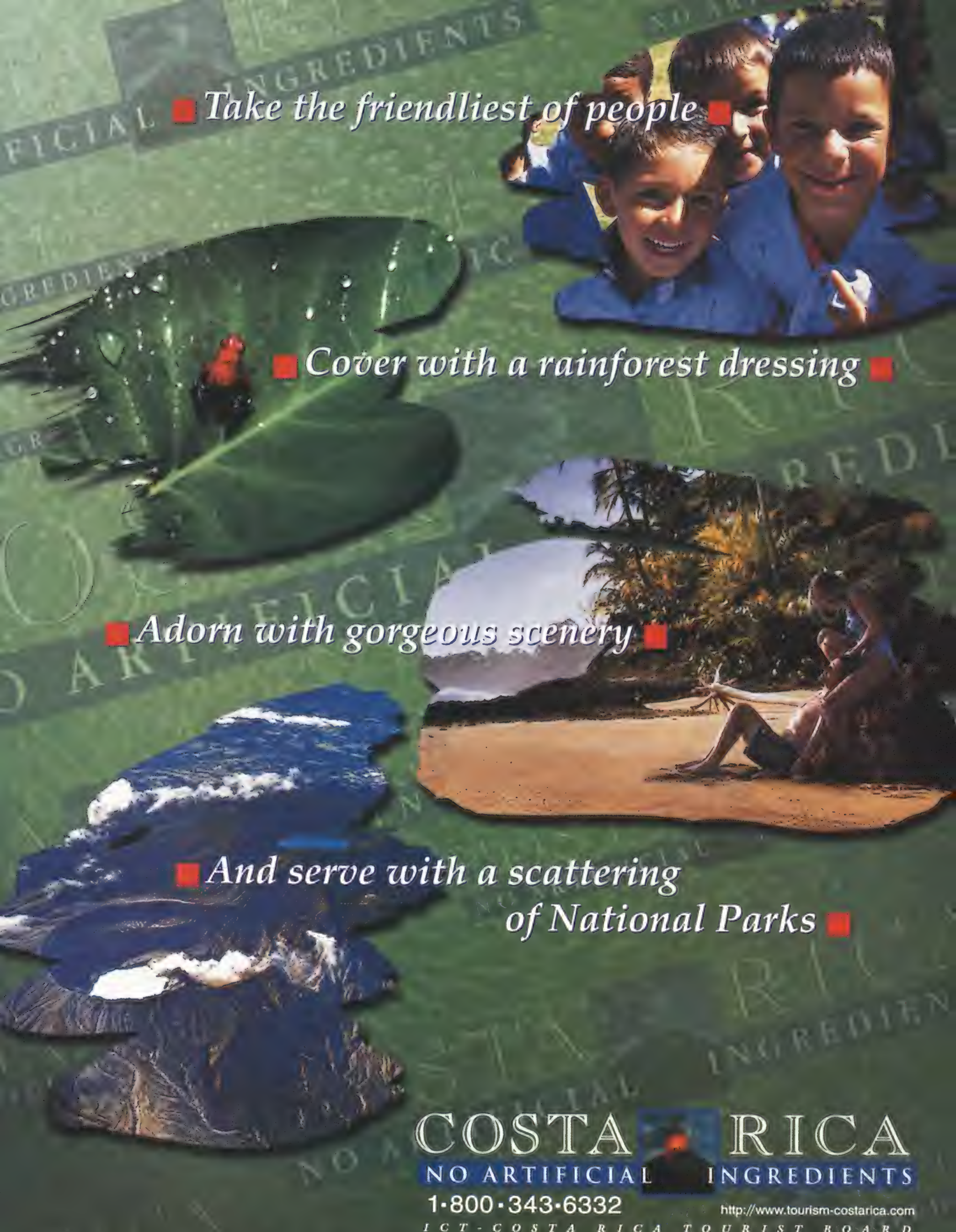
Despite the few negatives, synesthesia more often provides unequivocal pleasure. "It makes life more rich," says Michael Torke. An elderly English synesthete, who describes the word "emperor" as gray with silvery shimmers, says, "It enhances my ability to enjoy literature. I enjoy not only the sense of the word but the appearance."

For all the advances in understanding the condition, many fundamental questions remain. Even the number of synesthetes is under debate. Richard Cytowic once suggested that 10 people in a million have synesthesia. According to studies by Britain's Baron-Cohen, it's about 1 person in 2,000. But Grossenbacher suspects that the trait is more common—with maybe 1 person in 300 having had some form of synesthetic experience. On average, studies in England have shown about six females to every male. "That's not inconsistent with our findings," says Grossenbacher, who is continuing his NIH research with Carol Crane, in addition to other projects, as he takes up a new post at Naropa University in Boulder, Colorado.

Because the trait appears to run in families, researchers are now examining synesthetic family members and searching for a genetic factor. Their work may provide a missing piece of the puzzle. As Grossenbacher puts it, "Why does it happen in those brains and not others?"

When Michael Torke was in the second grade the teacher asked his class to imagine a useful machine and write a short story about it. Excited, he described a device that would show how different people experience similar sensations, like the color yellow. His parents and teacher were unenthusiastic. "They said, 'Why do you need it at all? Everyone experiences sensations the same,'" he remembers. "I really wanted to know how someone else tasted ice cream." As research into synesthesia continues, scientists are optimistic they can gain insight into human consciousness and perception in general. Their discoveries so far are a striking reminder that little Michael was right: reality isn't the same for everyone.

Susan Hornik last wrote about the barges that still ply the canals of Great Britain. Although not a synesthete, freelance photographer Kay Chernush has covered many colorful topics.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Arctic Arsenic

CHARLES FRANCIS HALL WAS MURDERED DURING AN EXPEDITION THAT MIGHT HAVE TAKEN HIM TO THE NORTH POLE DECADES BEFORE PEARY. OR WAS HE?

BY JAKE PAGE ◆ ILLUSTRATIONS BY GREG HARLIN

IT IS A BIT OF A STRETCH, TO BE SURE. BUT COULD IT REALLY BE THAT THE FIRST TWO Secretaries of the Smithsonian Institution set in motion events that led to the death by murder of the man who was, however unlikely a candidate he may have first seemed, probably America's greatest Arctic explorer? And that they thereby gave rise even more indirectly to one of the most astonishing adventures in the annals of exploration?

In 1870 Joseph Henry, the Smithsonian's founding Secretary, was president of the National Academy of Sciences, and his successor in the Castle was Spencer Baird. These two men were given responsibility for selecting the scientist who would accompany a Congressionally supported effort to reach the North Pole. This was a time when much of the polar map was empty and men of scientific merit could believe that beyond the white pack ice lay an open polar sea. The expedition was to be under the command of Capt. Charles Francis Hall, who was not a captain and certainly no scientist, but who knew more about living in the Arctic than any non-Eskimo in Europe or America.

Hall was a onetime New England blacksmith who became an engraver in Cincinnati and started a couple of penny newspapers there, all the while boning up on everything about the North. He had been infected by the bug that afflicted so many in the 19th century—the romantic notion of conquering the Arctic. Like the manned space program in the 1960s, such exploration was seen as the very measure of mankind's ability to control its destiny. And in 1845, it had led among other things to Englishman Sir John Franklin getting lost in the ice trying to find the Northwest Passage. What with English pride badly dented, and the American competitive spirit piqued, some 40 rescue missions went forth. They found no trace of Franklin, though

much of the Canadian Arctic archipelago came to be mapped in the effort.

Then, by accident, John Rae, a British employee of the Hudson's Bay Company who was marching about in the Arctic in 1854, heard some Eskimo stories suggesting that survivors of the Franklin expedition could still be alive. And soon an English Arctic hand named Francis McClintock came across a few relics of the expedition on King William Island, including a cached note saying that Franklin had perished and 105 men had set out from the wrecked ships on foot.

This, and the news in 1859 that experienced Arctic voyager Dr. Isaac Hayes was preparing an expedition, seems to have lit a fire under Hall, who hatched the notion that he should lead an expedition to find the missing crew, grandiosely assuming that he would be given command of at least a two-ship fleet of rescue. Leaving his pregnant wife, Mary, and their daughter, Anna, behind, and armed with a few dollars and a handful of recommendations garnered from Cincinnati's leading citizens, in 1860 Hall headed for New York. There financiers of such ventures lived, notably Henry Grinnell, retired shipping magnate and angel to several earlier Arctic expeditions.

Hall's expedition shrank to little but a boat, a supply of pemmican, firearms and himself.

Hall was a short, stocky man who was without much by way of formal education or the sort of breeding to easily dazzle the Eastern elites. There is only one extant photograph of him, from which an engraving was later made, and it suggests someone of little humor and no small talk. His only biographer, Chauncey C. Loomis, refers to him as "awkward, sometimes boorish." But Hall was of a mystical bent and, at age 38, claimed to have been called to the Arctic by God. He was intense about this assignment, evidently eloquent in its behalf, and possessed the single-minded tenacity of a terrier in a still-warm rabbit hole.

Nonetheless, it was not long before Hall's plans shrank from two thoroughly outfitted ships to free passage northward aboard a whaler with little but a boat, a supply of pemmican, thermometers and firearms, and himself, all of which he dubbed the New Franklin Research Expedition. It was financed by $343 from Grinnell and a few other donations, including $27 from Mary Hall.

That most perspicacious observer of America, Alexis de Tocqueville, noted that Americans tend to be plainspoken and clear in conversation, but when they have a large audience or a piece of paper in front of them, words tumble forth in orotund profusion. Charles Francis Hall was no exception. We know of him almost entirely through his own journals, which biographer Loomis says were often "operatic" in tone. For example, encountering an obstacle to the launching of his New Franklin Research Expedition, Hall wrote in his journal: "My persecutors shall stumble & they shall not prevail; they shall be greatly ashamed; for they shall not prosper."

On May 20, 1860, the whaler *George Henry*, captained by Sidney O. Budington, left New London, Connecticut, and Hall, though immediately suffering a bout of seasickness, was soon enraptured by the starkly beautiful scenery. His first iceberg "appeared a mountain of alabaster resting calmly upon the busom of the dark blue sea."

As it turned out, terrible weather and pack ice forced the *George Henry* to remain stalled on the shore of Baffin Island for the rest of the year. When a storm destroyed Hall's expedition boat, he persuaded Budington to lend him a whaleboat. Nevertheless, he decided to postpone his planned trip to King William Island and learn more about Arctic life, using the *George Henry* as headquarters. At one point, an Eskimo couple arrived on board and introduced themselves to Hall. They were Tookoolito and her husband, Ebierbing; they spoke English and had visited England, even meeting Queen Victoria and dining with Prince Albert. This bicultural couple would become Hall's fast friends—indeed, nearly his family—for the rest of his life. Soon after their meeting, Tookoolito complained about the bad language used by American whaling men, and Hall went Wagnerian in his journal: "One of the Iron daughters of the eternal snows of the North, standing like an angel, pleading the cause of the TRUE GOD, weeping for the sad havoc. . . ." and so on. Hall resolved to learn to live like Eskimos, and the couple were to be his tutors.

For almost another year he lived mostly among the Eskimos nearby, learning to feast on seal blubber and blood, and go hungry when there were no seals. He learned to hunt, drive dogsleds and put up with subzero temperatures. He thoroughly ingratiated himself with the local Eskimos by living their way. Going native, as it were, was a new idea at the time: most Arctic explorers, and especially the British, foolishly thought Eskimo ways were barbarous and beneath emulation. Hall, on the other hand, found igloo life "charming" for all its lack of civilized trappings—or perhaps because of its lack. He did take private exception to Eskimo religious beliefs and superstitions, railing on with missionary zeal—at least in his journal.

In 1862, when he returned to the United States, he had proved that Frobisher Strait was in fact a bay, not a pas-

sage through Baffin Island, and had even recovered some artifacts from Martin Frobisher's expedition 300 years before. This brought Hall some well-deserved recognition. He brought the Eskimo couple with him, leaving them in comfort at Captain Budington's house in New London. Determined to set forth again to nail down the mystery of the Franklin expedition, Hall discovered that the movers and shakers of New York and Washington, D.C. were preoccupied not by the geography of the Arctic but by a ferocious war being fought to preserve the Union. Yet again, there would be no full-scale expedition. Hall lectured and wrote a book and planned and lobbied. Finally, equipped again with little but a boat, pemmican, a few instruments and his stout faith that he was doing God's work, Hall and the Eskimos left New London at the end of June 1864. Traveling on the whaler *Monticello*, which was headed for northern Hudson Bay, they expected to be gone for three years.

Tookoolito and her husband, Ebierbing, became Hall's fast friends, indeed, nearly his family.

He would remain in the Arctic for five years, most of this time with Eskimos, much of it in extremis, overwintering, living off old caribou heads, hunched over in lightless igloos, his ink often frozen, sledging over miles of ice-bound territory. He made his arduous way north to Repulse Bay and, from there, over land, bay and strait finally to King William Island. Along the way, he was cheated by whaling captains, was snubbed by Eskimo friends for slights he did not understand, and suffered a near mutiny from five whaling men he hired to help him. One of these men threatened Hall so convincingly that Hall, always sensitive to treachery, fetched a gun, shot him, and then—desperate with remorse—nursed the man as, over a period of two weeks, he slowly died.

From Eskimos who lived on Boothia Peninsula, east of King William Island, he obtained actual relics of the Franklin debacle—silver spoons, scissors, a mahogany barometer case. Later, other Eskimos showed him yet more relics—part of a writing desk, planks, knives, shreds of a handkerchief. Finally reaching King William Island, he patrolled its dreary shore for a week or so, finding nothing more of the Franklin expedition except a skeleton of one of the crew. There were no survivors. Older by five years and immeasurably wiser about Eskimos and the Arctic, Hall returned to Repulse Bay, where he, Tookoolito and Ebierbing sailed August 13, 1869, aboard the whaler *Ansell Gibbs*, bound for New Bedford. Back in the States, he would see a copy of his book, *Arctic Researches and Life among the Esquimaux*, published in his absence.

This was a time when explorers were great heroes: the last great "unknown" on the map of the United States had just fallen with John Wesley Powell's navigation of the Colorado River through the Grand Canyon. Hall had spent more time on the ground in the Arctic than any other non-Eskimo in recorded history and returned to tell the tale. He had recovered actual relics of the Franklin expedition and provided what we today would call closure to that tragic affair. Hall was famous, and he was again determined to return, this time to reach the North Pole.

Others were interested in the consummate Arctic goal. A German expedition soon set out for the pole and failed almost immediately, but it helped goad the U.S. Congress into listening to the importunings of Hall, now a fairly shrewd lobbyist. For example, to obtain Smithsonian support for a polar attempt, Hall dangled his Frobisher and Franklin relics before it. Along with Hall's journals, they are part of the Smithsonian's collections today.

In 1870 Congress authorized $50,000 for the expedition and named Hall as leader, later providing an additional

$50,000 to refurbish a 387-ton steam tug fitted out as a two-masted schooner. Hall renamed her *Polaris,* and called on Sidney Budington to be sailing master as well as recommended a doctor and Arctic hand, David Walker, as chief scientist. But eventually Joseph Henry of the National Academy and Spencer Baird of the Smithsonian appointed a young and brilliant German doctor *and* natural scientist, Emil Bessels. Hall's reputation for blunt outspokenness went before him. Henry, warning privately that the goal of reaching the pole would take precedence over any scientific work, nonetheless advised Hall by letter about its importance while admitting, "in a measure, science must be subordinate." He also cautioned Hall to be gentle with Bessels, who was a "sensitive man."

The *Polaris* left New London on July 3, 1871, with a mostly German crew (not uncommon in those days when able-bodied young American males were heading West, not to sea). They stopped off in Greenland to pick up some sled dogs and an Eskimo guide known as Hans Hendrick and his family. Including Tookoolito and Ebierbing, this made eight Eskimos, almost the same number as the German party, which included a meteorologist and an engineer along with Dr. Bessels and the seamen.

The ship's complement might well have rejoiced in their good fortune, as weather and ice conditions permitted them to reach the northern mouth of Robeson Strait by the end of August. Whatever their northernmost point (82° 11', 82° 16' and 82° 29' were claimed), it was in fact farther north than any other white man had gone. Discipline, however, had already begun breaking down. Hall had to reproach Captain Budington for breaking into the liquor supply, and Budington took to bad-mouthing Hall to the rest of the crew. Meantime, Bessels and Hall did not get along at all: Bessels considered Hall an ill-educated boor, and Hall referred to Bessels as "that little German dancing master."

Having reached its farthest point north, the *Polaris* began to drift south, trapped in the gathering ice floes, and found a safe haven in a shallow indentation of the land Hall called Thank God Harbor, protected from the drifting ice also by a grounded iceberg he called Providence Berg. There the ship and its crew were to overwinter, locked in the ice and within sight of the far distant glow of the Greenland glacier. On October 10, with the ship prepared for the long and dark winter, Hall left with the first mate, Ebierbing and Hans on sledges to scout out the best route for the following spring's attempt on the pole. On October 24, the small scouting party returned to the ship, Hall in a jubilant frame of mind not just from being out on the ice again but also from confidence about making the pole in the spring.

Two weeks later, on November 8, Hall was dead. On returning to the *Polaris,* Hall had asked for a cup of coffee and, upon drinking it, was violently sick. He said he thought it was just a bilious stomach, but the next day he was worse, and continued to worsen for the next week. He was in great pain, his left side became partly paralyzed, and he was increasingly demented, moaning and crying out, many times accusing some of the officers of poisoning him. Bessels ministered to him until Hall refused all help. The doctor told all and sundry that Hall had suffered an apoplectic attack (a stroke) and was dying.

Hall, always sensitive to treachery, fetched a gun, shot him, then nursed him as he slowly died.

Yet after a week, Hall began to improve. He ate better. He grew clear-headed. He summoned a seaman to take some dictation, even stayed up for almost a whole day on deck. Steadily improving, he suddenly went co-

matose on November 7 and died early the next morning.

He was buried under the darkened, star-studded sky of midmorning on November 10, in a shallow grave just above the permafrost on the shore of Thank God Harbor, wearing a blue uniform and wrapped in an American flag.

Within a week of Hall's funeral, a gale set the ship adrift and moving toward churning ice. She came up against the iceberg Hall had named Providence, and they managed to plant anchors. Another storm left the *Polaris* with her bow trapped on a spur of the berg, and there she remained for the rest of the winter. The men became bored. In the close quarters of the ship, boredom bred paranoia and hostility. Budington, now in command, and Bessels despised each other but made no secret of their relief at being rid of Hall.

In March Bessels led a 15-day exploration. In June Budington sent two parties out in boats. While they were out, the ship was freed from the berg, damaged and taking on water. Budington set the pumps working and sent messengers to bring back the two crews. He planned, he said, to try to go farther north, but probably intended to head south as soon as he could. In August he tried to force his way into the open channel, but the *Polaris* was quickly hemmed in and drifting with the ice.

In early October a gale-driven blizzard forced ice against the ship. The engineer mistakenly reported that the hull was breached and the water was gaining on the pumps. Budington, who Tyson later testified was drunk, ordered everything thrown overboard. Tyson, some of the German crew and the Eskimos jumped onto the floe to move things back from the edge.

A box containing Hall's journal of the voyage up to his death was put over the side and never seen again. (All of what is known of the entire expedition arises from the accounts of others, and most of that came to light only in the meetings of a United States Navy Board of Inquiry two years after Hall's death.) Among the 18 people on the ice with Tyson, an experienced whaling captain before this voyage, were all the Germans except for Bessels and the engineer. And soon the people on the ice were adrift and alone. For in the confusion and darkness, as the ship's stores were being jettisoned, the *Polaris* broke free, and was driven away by the currents and wind.

George Tyson and the others watched in horror as the *Polaris* disappeared into the Arctic night. Nor did she return, even though they saw her within 10 miles the next day and signaled frantically. Convinced that she had abandoned them, they took stock (they had some provisions, two boats and two kayaks), and the Eskimos built snow shelters (igloos) on their fragile island, about four miles around, waywardly adrift somewhere between Ellesmere Island and Greenland. Though the senior officer among them, Tyson had no authority and watched with dismay as the German crew members chopped up one of the boats for fuel. They did manage to agree to ration food stores to two meals a day, everyone jealously examining the others' shares, and soon two dogs were dispatched and eaten. By October 28, they were out of meat and hemmed in by the weather, unable to make the 20 or so miles to shore. And the sun was gone for the winter. The dark made it difficult to hunt, and they were often without food and seal blubber even for use in the lamps. "Here we are," Tyson wrote in the small notebook he carried to maintain an occasional record, "and here, it seems, we are doomed to remain."

Hall was buried on November 10, wearing a blue uniform and wrapped in an American flag.

Through the winter the Eskimos occasionally managed to catch seals, thanks to a bright moon, but the Germans refused to make larger shares available to the two Eskimo

men who did all the hunting. Everyone was near starvation. On Thanksgiving they ate "strips of frozen seal's entrails, and sealskin—hair and all—just warmed over the lamp." The Eskimo children cried frequently—"a chronic hunger whine."

At one point Ebierbing came to Tyson, saying, "I don't like the look out of the men's eyes," and Tyson shared the faithful Eskimo's fear: that the crewmen would kill the Eskimos and eat them. Perhaps they realized that this would eliminate the only hunters; in any case it never occurred. Instead, by the end of December they were eating anything they could chew, including "the refuse out of the oil lamp—tired-out blubber."

On January 25 Tyson noted that they had been on the ice 103 days and that he, having not been prepared three months ago when he left the ship, had no proper clothes for temperatures some 40 degrees below zero, not even any change of clothes. "It sickens me to think of it, saturated as it is with the vile odours of this hut."

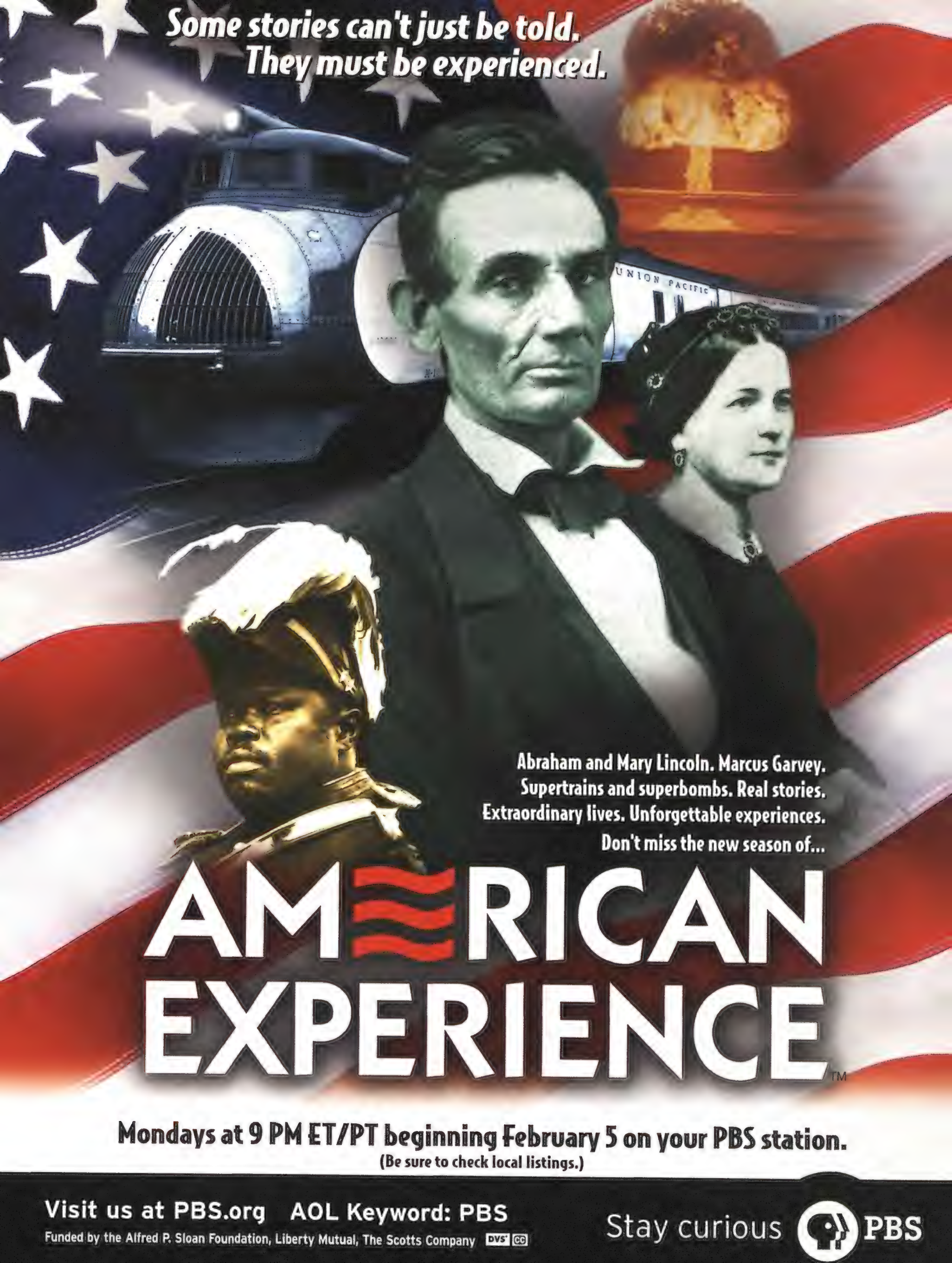
By early February, the Eskimos noted cracks in the floe, and it was clear the island that had so far floated southward with some safety would break up "and whether we shall survive the catastrophe we cannot tell." With the return of the sun, they caught occasional glimpses of land, the shore of Baffin Island, but the ice was far too rough for any attempt to reach it. They drifted on, starving but for the occasional fox or seal, as often as not beset by hurricane-force gales and snow. The ice continued to crack and snap around them, and on March 12 their ice island shattered from all the pushing and grinding of the floes, leaving them on a fragment some 75 by 100 yards.

As March ended, they were near the mouth of Hudson Strait, with hooded seals and even a bear killed by the Eskimos, but warm temperatures (10 to 15 degrees above zero) soon turned cold again and the waters were filled with threatening icebergs and disordered floes. April gales came on, and the ice split again and again until, finally, there was "such a small foothold left that we cannot lie down tonight." Toward the end of April, heavy seas swept away most of their remaining belongings—tents, bedclothes, skins—and they had to prevent the boat from following. Half-starved and weak, they held the boat at the edge of the floe where the high seas, full of ice chunks, again and again swept in and drove them and the boat to the opposite edge. They held on all night "enduring what I should say few, if any, have ever gone through and lived." When day broke, the seas calmed, and they were able to use the boat to reach a larger, safer piece of ice, but "Fearful thoughts go through my brain as I look at these eighteen souls, without a mouthful to eat."

On April 30 a sealer, the Tigress, *appeared from a fog bank and came alongside their ice floe.*

On April 30 a sealer, the *Tigress*, out of Newfoundland, appeared from out of a fog bank and came alongside their ice floe. The castaways clambered on board, leaving only a few battered tin pans and the bloody remains of a seal. Tyson told the rescuers they had been on the ice since October 15, in all some six months.

"One of the party," he wrote, "looked at me with open-eyed surprise and exclaimed, 'And was you on it night and day?' The peculiar expression and tone, with the absurdity of the question, was too much for my politeness. I laughed in spite of myself."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Loomis took samples of hair and fingernails from the corpse, still wrapped in the flag.

Not far from Newfoundland when they were rescued, they had drifted 1,800 miles measured directly—and in fact far more than that, given the waywardness of the currents and winds. Without a doubt, it was one of the most arduous voyages in history.

In the meantime, as Captain Budington later ex-plained, the *Polaris* had not been so badly damaged as thought but was running out of coal, so he ran her aground shortly after Tyson and the others disappeared, and set up a camp ashore. This fortuitously took place near Etah, an Eskimo village long familiar with Arctic explorers, and with the help of the native population, the crew survived, waiting till spring when they built two small boats, and sailed south. Before long, they were picked up by a Scottish whaler and taken to England, finally returning to New York aboard a British steamer on October 7, 1873. From there they went directly to Washington, where the Navy Board of Inquiry had long since heard George Tyson's side of things, including his testimony that Charles Francis Hall believed he was being poisoned.

But the Navy preferred to credit Budington and Bessels. They concluded that Hall had died of an apoplectic seizure, exonerated Budington in spite of evident bouts with the bottle and loss of discipline, and praised Bessels for his scientific efforts. The Navy thus avoided what might have appeared to the world as a scandal and disgrace, and went on to commission an admiral to write a bowdlerized version of the voyage for public consumption. Tyson continued his career at sea, but Budington evidently never sailed again. Bessels went to the Smithsonian to work on the scientific results of the expedition. His first volume, however, was so full of errors that the Smithsonian withdrew it, and Spencer Baird finally managed to dislodge Bessels from the Smithsonian office he had occupied for ten years. Bessels returned to Germany, dying in 1888—of apoplexy, in fact—long after his Smithsonian office had been turned into a bathroom.

Charles Francis Hall's achievements on his final voyage were, chiefly, to have sailed a ship farther north than any non-Eskimo before him, and to have reached the edge of the Arctic Ocean, proving to himself that there was no open polar sea. Would he have reached the pole? Anybody's guess, but many who had seen his single-minded drive would not have bet against him. Was he poisoned before he had the opportunity to fulfill this dream?

In 1968, nearly a century after Hall's last, fatal voyage, an English professor from Dartmouth College, Chauncey C. Loomis, was in the process of writing his biography of Hall, *Weird and Tragic Shores*, and was well aware of the dark rumors that Hall had been poisoned. Indeed, while his symptoms sounded something like a stroke, they also sounded something like arsenic poisoning, and years earlier, Arctic explorer Vilhjalmur Stefansson had suggested that if that were so, traces of arsenic would still be present. So Loomis traveled to Hall's grave near Thank God Harbor, and took samples of hair and fingernails from the still largely intact corpse, lying in its pine coffin wrapped in the flag just above the permafrost. He had them analyzed in a Canadian forensic laboratory, and they showed "an intake of considerable amounts arsenic by C.F. Hall in the last two weeks of his life."

Arsenious acid was a common medicine aboard ships in those days, used as a remedy for headache, ulcers, gout and a host of other ailments. Surely, there was plenty aboard the *Polaris,* and after reviewing the evidence about who had access to Hall during his final two weeks of life, Loomis concluded that "If Hall was murdered, Emil Bessels is the prime suspect"—Bessels, the very man chosen for the expedition over Hall's wishes by Joseph Henry and Spencer Baird.

But Loomis' "if" is a large one. Yes, Hall began to improve once he had banished Bessels from his cabin. And yes, Bessels had a low opinion of Hall. But even George Tyson could not bring himself to say that Bessels or others on board were sufficiently monstrous to do such a thing. And, given Hall's natural suspicion, his capacity to overdramatize (to himself at least) the treachery of others, could he not have banished Bessels and then prescribed an accidental overdose of arsenious acid for himself? He did have his own medical kit. And he was nothing if not given to acting on his own.

Nothing further has come to light in the past three decades, so it remains a mystery. And that lets Henry and Baird off the hook.

Whew!

Jake Page lives in Corrales, New Mexico, and last wrote for SMITHSONIAN *in May 2000. Illustrator Greg Harlin calls Annapolis, Maryland, home. His most recent* SMITHSONIAN *work appeared in July 1998.*

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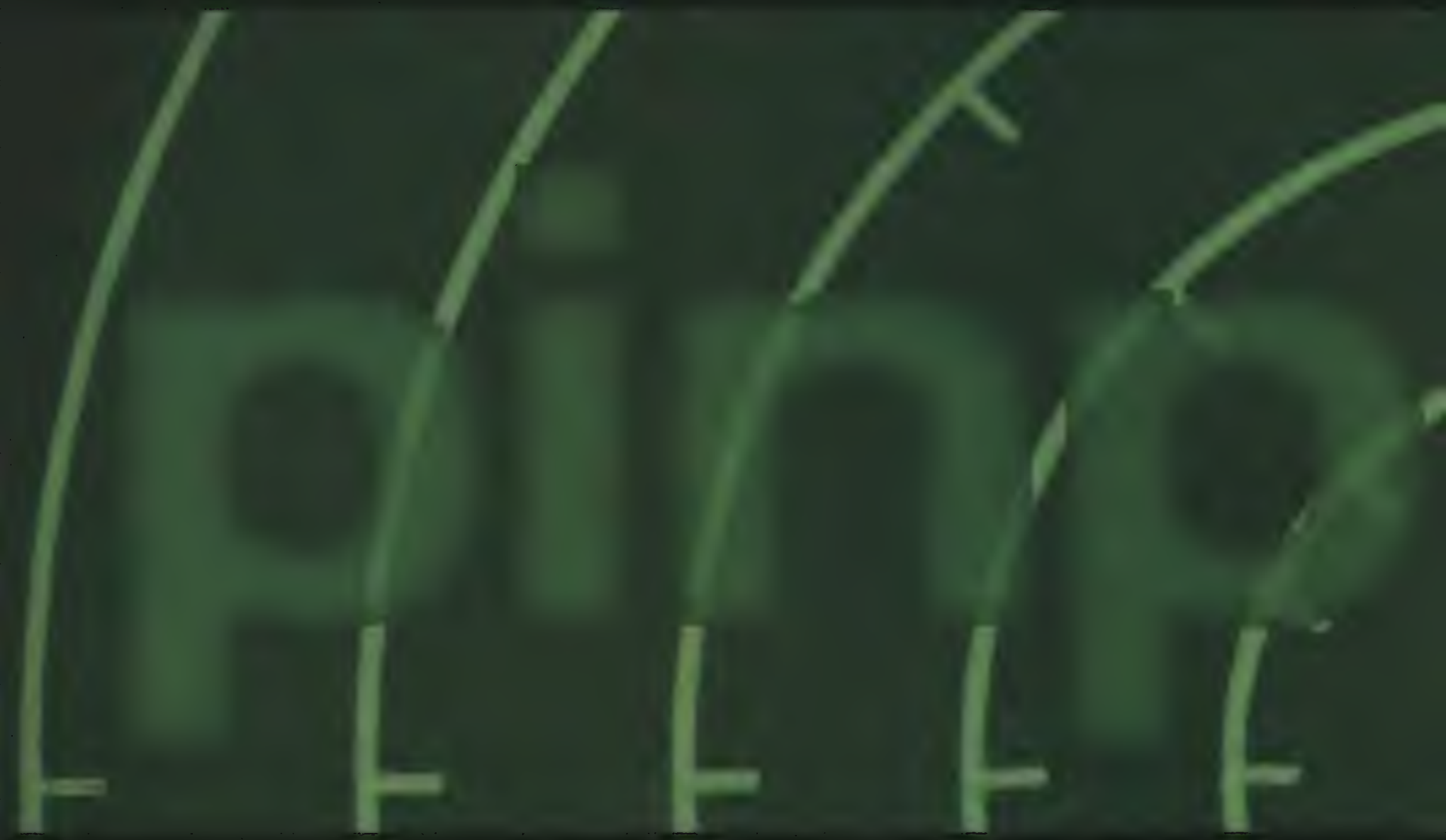

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In Search of Sanctuary

By Richard & Joyce Wolkomir

AS ITS FLORIDA HABITAT DISAPPEARS, THE AMERICAN WOOD STORK, OUR LARGEST WADING BIRD, IS MIGRATING NORTHWARD TO NEW NESTING GROUNDS

Photographs by Tom Blagden

"I REMEMBER ONE YEAR—IT WAS only February—and the din in this place was already deafening!" says one of the birders gathered at the temporary gate closing off the plank walkway through Corkscrew Swamp Sanctuary. A sign says "Wood Storks Nesting." But there is only silence.

By now, mid-March, wood storks should be gliding in, bearing fish and crayfish in their gullets to their ramshackle nests, 5 to 20 to a cypress. Their gawky young should be braying for food. This should be a wood stork tenement city, a Lower East Side of wood storks. But, overhead, only a swallow-tailed kite is soaring.

This National Audubon Society sanctuary in southwestern Florida, near Naples, is traditionally home to North America's largest breeding colony of wood storks. But birders straggling along the 2.25-mile boardwalk today are shrugging.

If the endangered storks were about, these expert birders would spot them. Most are armed with high-caliber binoculars and howitzer-lensed cameras that look potent enough to drop a rhinoceros.

This swamp is dense with arrowhead, pickerelweed, saw grass and custard apple. Strangler figs send ropelike roots down the trunks of 700-year-old cypresses. Epiphytes grow on the limbs of other plants. Water moccasins lurk under the boardwalk. This is the subtropical Florida forest primeval, the wood storks' natural habitat. But driving here you pass swaths bulldozed for future tract homes, now just mud and puddles. Corkscrew Swamp's 11,000 acres contain the country's largest remaining stand of virgin bald

Nesting in a stand of cypress, two wood stork pairs guard their broods.

cypress, but it is not distant from a bulldozer war zone. And the sharp-eyed birders, however eager, are seeing no wood storks this evening.

In the preserve's parking lot, two nonbirders wait. "My daughter's in there with her friends—she's a real bird expert, and she wants to see wood storks," says the older woman, who has been reading a Belva Plain novel. The woman in the adjacent parked car, keeping her Welsh corgi company, says: "My husband's in there looking for wood storks, too, but he hasn't seen any."

"Well," says the older woman, abruptly pointing upward, "there's one now!"

It glides over the parking lot like an airliner on its landing approach, its wings spanning more than five feet. It is white, except for black along its wings' trailing edges and a black tail. Its toothpick-thin black legs, ending in dainty pink feet, stretch out behind. Its long, naked neck, blackish gray, is extended. Its tiny lightbulb head is also naked and dark gray. Its huge beak tapers to a slightly down-curved point. The wood stork glides without flapping, like a vulture.

"It could be from the Eocene," murmurs the woman with the corgi.

When her husband returns, as if to exonerate himself for spotting no storks, he reels off some statistics: in the 1930s the United States had about 20,000 wood stork pairs, mostly in Florida; by 1980, the species was down to about 5,000 breeding pairs. The disappointed birder mutters, "Too many people."

But two days later the couple is some 300 miles north of Corkscrew Swamp, on Amelia Island, near Jacksonville, in Florida's northeastern corner. Beach houses line the Atlantic shore. At the island's northern end is Fernandina Beach, a funky town of fishing boats and tourist shops and pulp mills. At the southern end is the Amelia Island Plantation, one of the preserves springing up across the South where executives migrate when their plumage grays. They are walled in but provided with their habitat needs, including edifice-style housing, fine restaurants, tennis courts and swaths of precision-cut turf for whacking golf balls.

On this 40-degree Fahrenheit morning, the man who saw no wood storks is riding in a Plantation golf cart with a staff naturalist, who stops beside a pond. "We call it 'Egret Airport' because so many waterbirds come here," she says. Golf clubs are clacking balls into orbit. Navy jet fighters roar overhead. "There's a great egret," she says. "Those are hooded mergansers, and a snowy egret, and . . . look up in the pine!"

Seven wood storks perch in a long-leaf pine, their backs to each other, hunched over, resting their dark gray bills on their necks like dejected old men. The man who is finally seeing wood storks jots in his notebook: "Addams Family pets."

Later, in their room, the man and his wife find a local publication with a wood stork announcement: "This groupie bird, on federal and state endangered lists, is increasing its numbers in this area due to degradation of nesting and feeding habitat in South Florida. A warm welcome to the wood stork for choosing Amelia Island as one of its newer homes."

For two-and-a-half decades, wood storks have been moving north. And the stork-following couple's next stop is a center that studies the storks that have moved northward: the Savannah River Ecology Laboratory (SREL). Funded primarily by the Department of Energy, it is operated by the University of Georgia at the Savannah River Site, a vast Cold War enclave near Aiken, South Carolina, where DOE reactors produced plutonium and tritium for warheads. For nearly

At enclaves near Waynesboro in eastern Georgia, colonies of wood storks thrive. Above: The highly gregarious birds nest and feed together. Below: Researchers Larry Bryan and Lara Hopkins conduct their monitoring from a canoe. Left: Larry Bryan, perched atop a 60-foot observation tower, gathers data on the storks.

20 years, SREL biologists have been studying immigrant wood storks. Researchers shinny up cypresses and wade through swamps, analyze isotopes in feathers and track storks via radio transmitters, piecing together an avian soap opera: Can a troubled Everglades bird find happiness by running away?

Larry Bryan, chief wood stork researcher, tells his visitors the world has 17 species of storks, but only wood storks, *Mycteria americana*, nest in North America. They are our largest breeding wading birds. They roughly resemble herons or egrets or ibis, but DNA studies show wood storks are actually kin to vultures. Wood storks once bred from Argentina up to, mainly, southern Florida. But by the mid-1980s, after water diversion projects disrupted water fluctuations, only 250 pairs of wood storks still nested in the Everglades National Park. Now, with plans to restore the southern Florida wetlands, wood storks have become an indicator species for assessing habitat quality.

And they have voted with their wings. "They've been breeding in Georgia and South Carolina regularly since 1981," Larry Bryan says. "In fact, in the last two years, up to a third of the entire U.S. breeding population has been in these two states." He adds: "It may be the Everglades used to be so great they didn't need to come up here—it's based on hydrology."

Bryan and his colleagues have continued in the footsteps of a former University of Georgia zoologist, M. Philip Kahl, Jr., who studied wood storks in the late 1950s and early '60s. He did much of his research in the Corkscrew Swamp Sanctuary, in Florida's Big Cypress region. As an indicator of how precipitously the southern Florida ecosystem has declined, in the 1960-61 nesting season Kahl counted some 6,000 pairs in Corkscrew Swamp, with about 17,000

young. In 2000, according to Corkscrew Swamp's executive director, Ed Carlson, the sanctuary had only 1,721 nests, but in the 1990s the count often has been much lower. It is canal digging, which drains wetlands to make way for agriculture and development, that has done in the wood storks, says John Ogden, senior ecologist for the South Florida Water Management District. The wetlands destruction has disrupted natural water cycles on which wood storks depend, because of the way they feed.

Most wading birds sight their prey, then jab with their bills. But wood storks, Philip Kahl discovered, hunt primarily through touch. A feeding wood stork wades with its open bill submerged to its base, moving its head forward and back, or side to side, in a sinuous pattern. When the groping bill touches a fish, it snaps shut. Kahl electronically timed the snap, rating it one of the fastest of known vertebrate reflexes: about 25 thousandths of a second. "Tactolocation," Kahl dubbed this fishing technique. It includes "foot stirring": before stepping down, a stork pumps its foot to startle hiding fish.

Kahl calculated that a five-and-a-half-pound wood stork would eat more than one pound of fish daily. He figured that, during the 1960-61 breeding season, to feed themselves and their young, Corkscrew Swamp's colony of 6,000 wood stork pairs gathered more than 2½ million pounds of food.

Water cycles are the key. Normally, in rainy seasons, wetlands swell and fish multiply. But then the fish are spread out, making the wood storks' tactolocation inefficient. Thus, storks time their nesting, when they need lots of food, to low-water periods that concentrate fish in pools. Besides fish, storks eat the occasional salamander or frog, snake, baby alligator, young bird, wood rat or plant.

Once the food supply appears relatively assured, conditions for breeding are established. The actual mating takes 15 seconds. Storks spend about three days building the untidy nest (cypresses are a favorite tree), the male usually flying in sticks and leaves, which the female weaves together.

"If they have a vice, it's stealing nest material," says Larry Bryan of SREL. "They'll sit in their nest and reach over and tease out a twig from the nest next door."

In a month, the two to five eggs hatch in the order of laying. The oldest, biggest hatchling tends to snatch the most food; in good years, everybody eats. In poor years, younger birds may starve. But at least one chick, the oldest, may survive.

The presence of alligators (above) near wood stork nests helps to deter the threat of predatory raccoons. At top right, a stork, carrying greenery for nesting materials, wings homeward; below, two vociferous chicks demand their dinner.

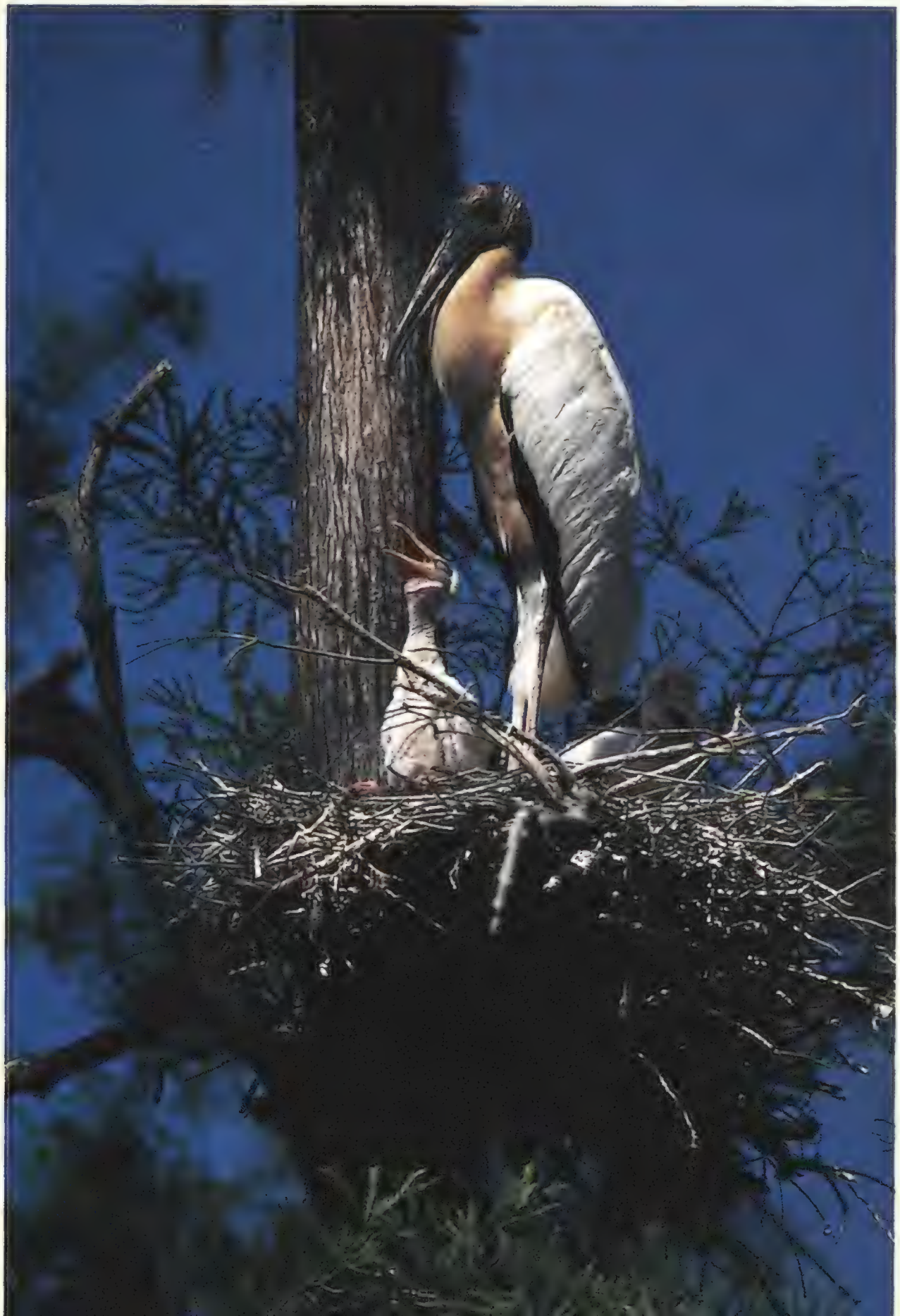
At their nesting tree's base, wood storks benefit from water deep enough to cover an alligator. Alligators keep away raccoons. If receding water drives away the alligators, raccoons can decimate a colony quickly. For their services, alligators receive any chicks tumbled into the water by sibling rivalry or premature training flights.

Flying is another factor in stork economics. Wood storks can soar like vultures or eagles, spiraling up on thermals or rising masses of heated air. Then, wings motionless, they glide, expending little energy, traversing many miles. That is important because even a habitat as rich as Corkscrew Swamp cannot entirely feed a breeding colony. With hungry chicks braying like donkeys, the harried parents must forage far afield.

In level flight, Philip Kahl found, storks average 175 flaps per minute, expending lots of energy. But the storks prefer to flap to several hundred feet, catch a thermal, and then—wings outstretched—spiral upward. "Within a few minutes, a stork in a strong thermal current can rise almost out of sight to the naked eye," reported Kahl. When they reach the top of the thermal current, he said, the storks reshape their wings for gliding, and peel off singly or in formation to sail to feeding sites. Storks typically stay home until thermals develop, and return before the thermals subside in late afternoon. If they can't return on the thermal currents, Kahl found, they spend the night at the foraging site and fly back on the next day's thermals.

A waterway threat triggered SREL's wood stork project. In the early 1980s the Department of Energy planned to restart a dormant reactor at the Savannah River Site. But water used to cool the reactors would pour into the Steel Creek delta, raising water levels where now-endangered wood storks foraged.

Storks—visitors from southern Florida—had fed in the Steel Creek delta since the 1950s. These wading birds, after raising their nestlings,



have wandered as far off as New England or Canada. But in 1980, for the first time, wood storks were discovered nesting in Georgia. They colonized Big Dukes Swamp, near Millen, close to a crossroads town known, appropriately, as Birdsville. If the reactor restarted, gushing cooling water, the endangered Birdsville storks would no longer be able to forage in an inundated Steel Creek delta.

"Antinuclear activists said, 'We've got you!'" says ornithologist I. Lehr Brisbin, senior scientist at SREL. Brisbin, who is so energized by research that he fits turtles near his Aiken, South Carolina, home with transmitters so he can track them through town, knew big problems loomed.

The reactor's effluent indeed would raise water levels in the storks' foraging stream. Worse, the reactor water would be nearly boiling. "When the reactor was running during the 1960s, five miles downstream the water would be so hot you couldn't hold your hand in it. And students in aluminum canoes couldn't put their bare feet on the floor, and if they were to have jumped around and tipped over, they'd have died!" says Brisbin.

SREL, along with assistance and funding from several sources, joined with the National Audubon Society to build artificial wood stork foraging ponds at a nearby Audubon sanctuary. The site was a dried-up lake bed, called Kathwood. Then, the Cold War's end scotched plans to restart the offending reactor. Even so, the Department of Energy has continued to support the wood stork studies. (That funding has dwindled and looks increasingly uncertain; wood stork researchers are seeking alternative sources.)

For field researcher Larry Bryan, his work has meant rough duty, even aside from facing funding problems. In March, when Georgia's and South Carolina's waters ebb, storks soar in from Florida to nest. Bryan's studies

On South Carolina's Fenwick Island, a wood stork hunts. The birds feed by a process of tactolocation or tactile groping, actually bumping into their prey.

have focused on the Birdsville, Georgia, site. He describes it as a flooded cypress forest. Adult wood storks, in contrast to their vociferous nestlings, are mute. And so, at first, there is only the rattling of bills as males jockey and couples mate. At Birdsville, the storks nest 30 to 100 feet up in cypresses.

From the passenger seat of a Cessna, he peers down at Birdsville. Inside the swamp he sees a treeless circle. Trees rimming the circle are dotted with white blobs, each a nesting bird. About 200 are great egrets and 400 are wood storks. The treeless swath allows the ponderous storks clear airspace to take off from their nests and land. Bryan snaps photographs, data for his annual nest count.

Most of the time, instead of shooting aerial photographs, he puts on old jeans and shoes and wades into the brown Birdsville water. There are water moccasins. "The alligators take care of them," he shrugs. A few of his researchers, wading to count nests, have inadvertently stepped on submerged alligators.

Hatching is late April to early May. It is time to take samples. Bryan chains a Swedish climbing ladder section to a trunk, ascends, chains a new section above him, and so continues upward. From their nests, the adult storks watch. When he is halfway up, they flee, willing to sacrifice their young if need be, to nest another day. But the chicks are in no danger, although Bryan carries a stick ending in a noose.

Seventy feet up, he reaches the nest. These chicks are 4 to 6 weeks old, he says, "too young to run around the tree and cause a disturbance." It is not nice in the nest. For one thing, it is about 100 degrees and humid, and the nest is thick with guano. It stinks. When it is hot, wood storks defecate down their legs, letting the evaporating liquid cool them. These chicks still have yellow bills. And they have feathered heads and necks. Not until their third or fourth year will they be mature and bald. Bryan theorizes baldness helps storks keep clean when they submerge their heads and necks in weedy waters.

With his noosed stick, Bryan snags a chick. He pops it into a laundry bag to lower to helpers below. They band it. They also take blood samples and pluck a feather or two, to analyze later. Then Bryan hauls the outraged chick back to its nest, no harm done. He lowers a sibling. When he leaves, the parents will return.

For observing behavior in the Birdsville nests, the laboratory has erected a 60-foot metal tower. It is easier than climbing cypresses, but the tower sways sickeningly. Also, vultures roost on top, and the ladder is slippery with vulture guano. With binoculars and spotting scopes and notebooks, the researchers spy on nest comings and goings in 100-degree heat. Over time, they have logged 26,000 hours of nest observations. In the course of 17 years, they have been compiling a database of the endangered birds' breeding success.

Meanwhile, wildlife biologist Tom Murphy of the South Carolina Department of Natural Resources has been conducting a similar study of wood storks nesting in the coastal areas of South Carolina, particularly ACE Basin, named for the initial letters of three principal rivers, the Ashepoo, Combahee and Edisto. "We had our first nesting record in 1981, with 11 nests," says Murphy. "Last year we had 1,236 nests, and 2,604 fledged chicks." Murphy and his colleagues have been managing the wetlands for wood storks; they lower the water levels in ponds on a staggered schedule, giving the storks an extended period of rich foraging.

Overall, the researchers find, Georgia's and South Carolina's colonies are slowly growing. They also observe such details of stork domestic life as watering runs—the adults slurp up water from the swamp and then flap back up to the nest, to dribble the fluid into the chicks' open beaks. They see wood storks stand on the nest with wings outstretched to shade the chicks.

Tom Murphy says wood storks nesting in his ACE Basin bailiwick do not form huge colonies as they do in the Everglades. "Up here, 400 pairs is as large as it gets because their habitat here is linear, spread out along river floodplains," he says. "It looks as if the overall wood stork population in the United States is stabilizing at about 7,000 pairs."

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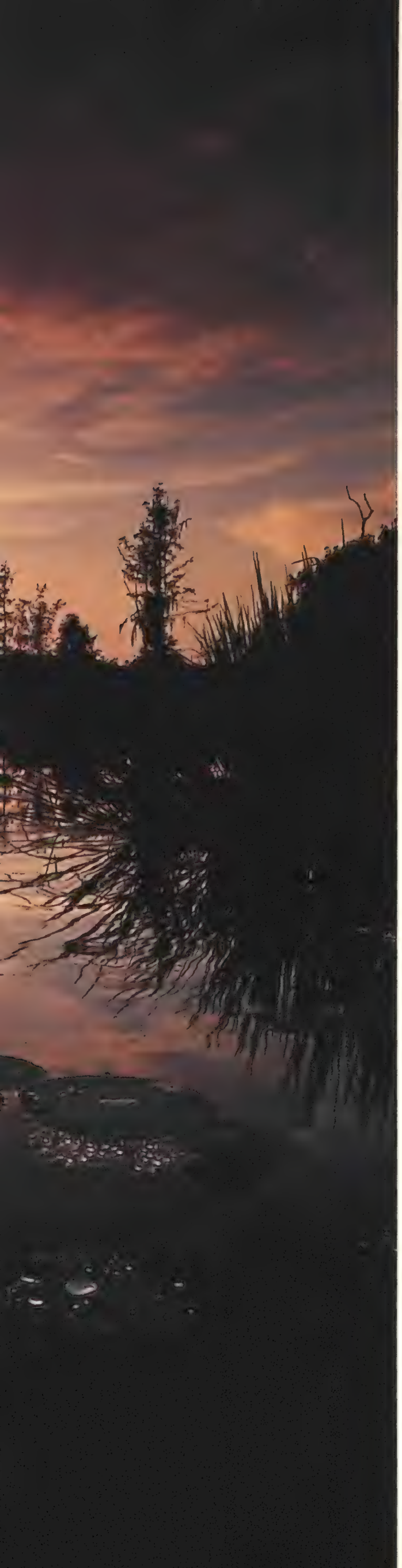
At SREL, one of Larry Bryan's aims has been to determine what is normal for these wood storks. "Then, if an industry were to pollute near the colony, we'd have data to show if their behavior or overall physical condition changed," says Bryan.

From a Cessna, he studies stork foraging. "We've followed them up to 5,000 feet," says Bryan. "They've outclimbed the airplane on many occasions." Everglades wood storks have been documented gliding more than 62 miles. Birdsville storks, Bryan has found, typically fly only about 6 miles to feeding sites. But he once followed a stork on a 39-mile flight that took 2½ hours, one way. "We were afraid of running out of fuel," he says. Often on these foraging flights, Bryan believes, the storks establish general headings but are flexible about where they feed. Bryan shows aerial photographs he took of wood storks foraging at all sorts of sites: a variety of ponds, old ditches and Carolina bays (SMITHSONIAN, September 1997), lozenge-shaped wet patches.

Larry Bryan also studies contamination from mercury, which falls with the rain. Inland-nesting storks are more contaminated than coastal nesters because freshwater fish are more contaminated. If the storks ever sicken en masse, these studies may show the cause is increased mercury pollution. By analyzing the isotopes of nitrogen and carbon in stork feathers, an indicator of diet, a SREL geochemist can say whether the bird was from a coastal or inland colony, and how high up the food chain it was eating. (Fish higher up the chain, like catfish, contain more mercury.) But Bryan has found that northern wood storks favor lower-on-the-chain sunfish.

South Carolina's White Hall rookery seems an Edenic refuge, but a cold snap this far north could imperil wood storks.



By June, the year's hatchlings can defend themselves against marauding crows or vultures or neighboring adult wood storks that—especially in bad years—occasionally pitch their neighbors' chicks over the side. They are ready to fly. At first, says Larry Bryan, "there's a lot of just levitating over the nest, and crashing into trees." Ultimately, they go. Now the researchers shift their attention to Kathwood, the artificial foraging ponds at the National Audubon Society's Silver Bluff Plantation Sanctuary, near SREL.

Kathwood is delta-shaped and diked into four sections. Sanctuary wildlife biologist Paul Koehler is looking over one of the ponds with Larry Bryan and two visitors. "When we hear the chicks are leaving their nests in Birdsville, which is 35 miles from here as the stork flies, we start letting the water out of the first area, and the birds can be here within hours," Koehler says. Kathwood provides a foraging ground by lowering water levels and concentrating fish in a series of pools. By the time the last section is drained and substantially fished out, it is time for the storks to move on to the next feeding grounds.

"One of the joys of Kathwood is using it as an outdoor lab to study behavior," says Bryan. Here, he watches the storks from the relative comfort of a two-person blind covered with camouflage mesh. "When we opened Kathwood in 1986, our best day showed a count of 97 storks; in 1999 we counted 305 storks on one of these ponds in one day," he says.

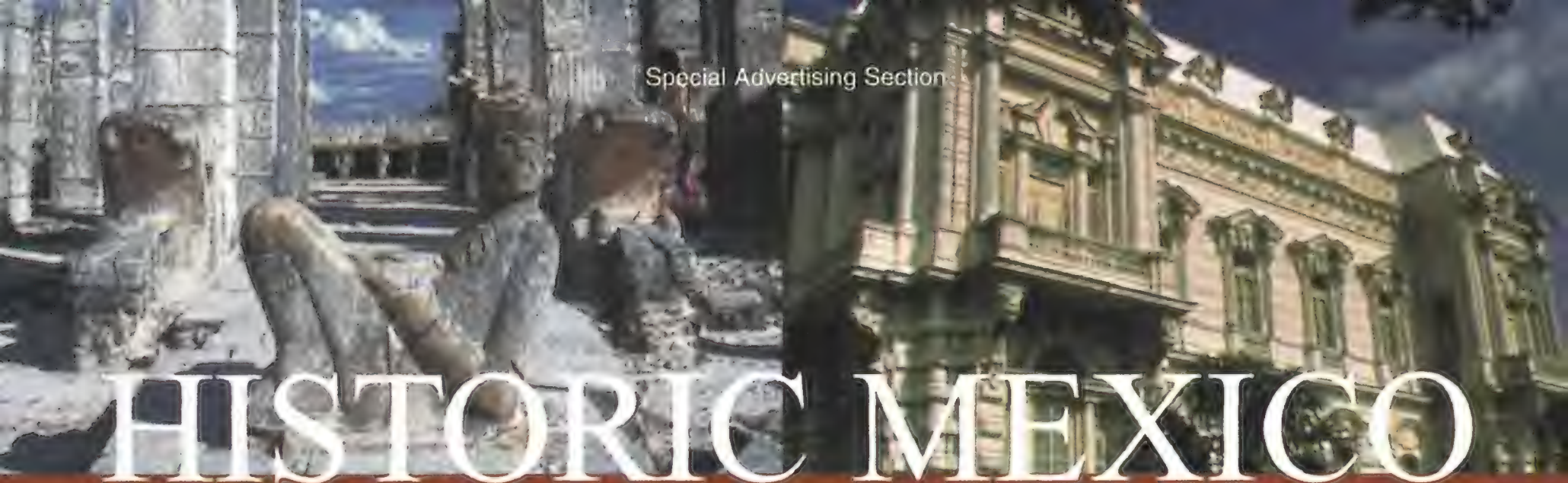
He is unsure how the storks first found Kathwood. "But I think they're attracted to exposed mudflats," says Bryan. "Just stock a pond with fish and they won't come in, but drop the water level to show some mud and they come—there's a theory that storks, being related to vultures, might smell the exposed mud."

At Kathwood, Bryan discovered, nighttime is party time. "We found the storks feeding at Kathwood are at least as active at night as during the day, and probably more so," he says. Maybe prey is easier to catch at night. "During the night, catfish are more active," Bryan says. "Storks also may have less competition at night from great egrets, the second most common bird here."

Kaboom: at another research site on the coast, Larry Bryan shoots three 20-pound rockets attached to a net, aimed at a hapless wood stork that has landed on a mudflat, attracted by decoy storks. "We've caught some 25 of them over the last ten years using this rocket-netting method; we've never hurt one," says Bryan. One technician gingerly hugs the netted bird. Another grips its massive bill to prevent snapping. They fit the captive with a belted-on backpack, containing a radio transmitter. "Wood storks put up a pretty good fight," says Bryan. "Sometimes we wrap a bandanna over their eyes because not seeing calms them down." Released, the stork flaps disgustedly away, carrying its transmitter. By tuning in this bird's signals, Bryan can follow it in an airplane, seeing where it forages.

For now, researchers agree, northern migration is not the entire answer for wood storks: cold snaps are a real threat. South Carolina biologist Tom Murphy says, "When this happens, you can see ice on their beaks and legs." In winter, the storks head back to Florida. Luckily, plans are afoot to restore the Everglades. As John Ogden, of the South Florida Water Management District, puts it: "We're going to get those South Carolina and Georgia wood storks back!"

Richard and Joyce Wolkomir waded into cypress swamps to report this story. Photographer Tom Blagden's new book is Rivers of South Carolina.



HISTORIC MEXICO
Mayans and Much More

by Lynn Seldon

There's never been a more historic time to visit Mexico, with a new leader (President Vicente Fox) and a new energy about the future. However, there's also a new energy about Mexico's past, with record numbers of visitors coming to Mexico to explore its unique history and culture. In fact, more people visited Mexico last year than any time in the country's history.

"We expect these record-breaking numbers to continue and are proud to be a part of this historical moment in Mexico's tourism history," says Javier Vega, General Director of the Mexico Tourism Board. The group is dedicated to positioning Mexico as a complete travel destination and increasing the country's tourism presence internationally by promoting special sectors like history.

"Whatever your travel needs and desires may be, Mexico has developed infrastructure, diverse product, and exceptional service to meet and exceed them," says the MTB's Patricia Echenique. For travelers interested in history, Mexico definitely exceeds expectations.

Living History

Mexico visitors will quickly see that this is a nation where the past plays a significant role in the present and future. It is also a past that differs greatly from the rest of North America and one that is generally easy and enjoyable to explore. Just get on a plane headed south and you're likely to land in a different century.

When Mexico was "discovered" in 1519, the country was already home to around 10 million natives living in civilized societies. These original Native Americans became the backbone of the Spanish colonial empire that was to follow. In fact, about 15 million citizens today are pure-blooded Native Americans.

The pre-Hispanic era (about 1200BC to 1521AD) was one of the richest periods in the Western Hemisphere, with five major cultures playing a major part in Mexico's history. The Olmecs were the first civilization, with later cultures borrowing heavily from their religion, architecture, and art. The famed Mayans were generally next, with an incredible array of ancient cities and ceremonial sites that still draw crowds today.

The Zapotec/Mixtec and Toltecs drew from the others, with the Toltecs building Tula, one of the country's most famous pre-Hispanic cities. Finally, the Aztecs dominated Mexico until the Spanish arrived, with a large and organized empire that stretched down into Central America and South America. All of these cultures left behind ruins that Mexico has preserved for all to explore.

Mexico faced Spanish rule until 1821, with the conquerors leaving an indelible stamp on the culture of the country. Many cities and historic sites derive from this period. However, after an 11-year fight Mexico gained independence from Spain. The next two centuries have brought many economic and political changes, as well as the Revolution that led to a constitution still in force today (modeled after the U.S. Constitution).

Of course, the Mayan ruins, the Colonial cities, and many other attractions dominate the historic landscape of the country. However, outside virtually every city and village, history awaits wandering (and wondering) travelers. It's just a matter of heading south of the border and saying "si" to the friendly locals and record number of (smart) visitors choosing Mexico as a "bueno" historic destination.

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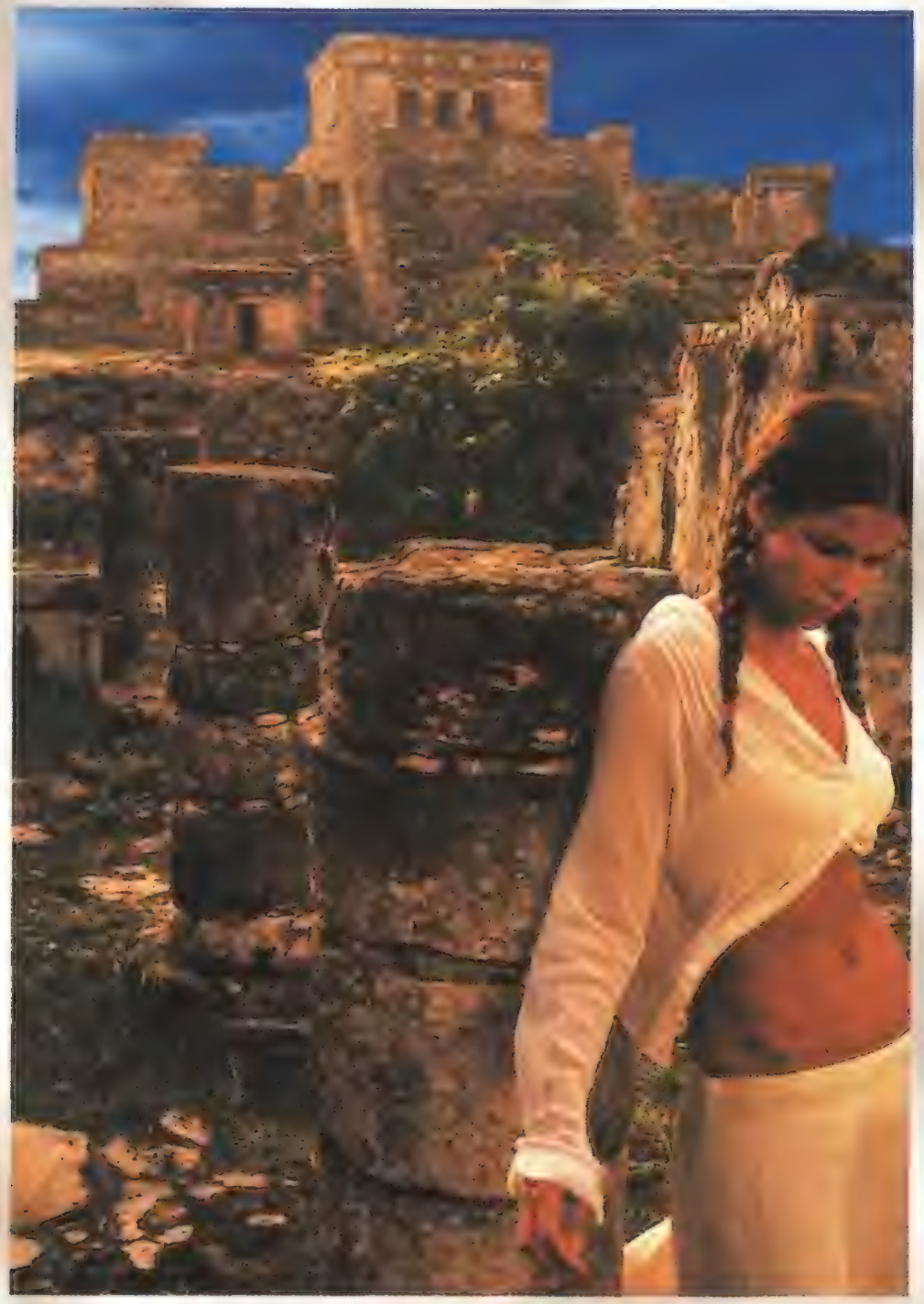

I was born thousands of years ago, and soon I taught the world to count the days by the sun, the months by the moon, and the years by the stars. **Today I am affectionately called México, and I am full of intrigue and wonder.**

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In *A City Park* (1887), Chase employed the light palette, angled lines and focus on contemporary urban life that characterized the work of the French Impressionists.

Willi

Praised by critics, admired by colleagues and respected by students, the distinguished 19th-century artist produced paintings and pastels of gentle beauty ◆ BY STANLEY MEISLER

am Merritt Chase

WILLIAM MERRITT CHASE dominated the universe of American art during the late 19th century. He was one of the first artists to turn out Impressionist landscapes in the United States, a portrait painter of the first rank, a master of still life, a renowned teacher, a leader of societies of artists, and a gifted connoisseur of European painting. He also knew everyone who counted in American art.

Chase created the image of the typical artist for most Americans in his day. He believed in theatrical self-promotion, in the need for an artist like himself to show that he was different from the rest of society. He filled his studio with objets d'art and so much bric-a-brac that it became the talk of New York. When he walked down the street, he wanted onlookers to know he was an artist—a rather dandy, gentlemanly, eccentric artist.

All eyes, according to an artist friend, would focus on Chase, "a gallant gentleman. . . with mustache slightly tilted," as he sauntered "down the Avenue wearing a flat brimmed French silk hat, a broad black ribbon hanging from his glasses, and accompanied by a beautiful white Russian wolfhound." Sometimes his servant, Daniel, followed behind, dressed in a fez and Turkish pantaloons.

Despite the pose, Chase, the Indiana-born son of a failed shoe store owner, was thrilled at his own success and reputation. "He came to New York as a young guy from the Midwest," says Barbara Dayer Gallati of the Brooklyn Museum of Art, a leading authority on Chase. "I don't think he ever got over it. He may have said to himself, 'How did I get here? They are going to find me out!'"

Notwithstanding such moments of possible self-doubt, Chase produced paintings and pastels of gentle and wondrous beauty. Gallati has assembled more than 30 of them, mostly early Impressionist coastal scenes and landscapes of Central Park in Manhattan and other city parks in Brooklyn, for an exhibition called "William Merritt Chase: Modern American Landscapes." The show opened at the Brooklyn Museum of Art in May 2000, and then went on to the Art Institute of Chicago. Its final stop is the Museum of Fine Arts in Houston, where it will remain through March 11, 2001.

The works on display were created during a five-year period when Chase was experimenting with the techniques of the French Impressionists. These paintings came out of a crucial time in his career and can be understood best by looking at how they fit into his life's work as a whole.

As a young man, Chase, born in 1849, tried twice to break from Indiana. He joined the Navy as a 17-year-old but found life aboard ship miserable. His father arranged a discharge

PP. 84,85 ART INSTITUTE OF CHICAGO

Chase, pictured here c. 1878, cultivated a public image of artful sophistication that won him both publicity and patrons.

PARRISH ART MUSEUM, WILLIAM MERRITT CHASE ARCHIVES, SOUTHAMPTON, NY

three months later. As a 20-year-old, Chase persuaded his father to pay for art studies in New York. But the Indianapolis shoe store failed a year later, forcing an end to the payments for tuition. The family then moved to St. Louis, and Chase joined them there. But he did not remain long. Art was booming in a newly industrialized America, with many new members of the wealthy class eager to become patrons. A group of seven St. Louis businessmen, impressed with Chase's work, put up $300 each so that he could study in Europe. In return, they asked that he paint a picture for each of them and act as their agent buying paintings in Europe.

Paris was the center of the art world at the time, but Chase, who left for Europe in 1872, chose a rival, Munich, and its Royal Academy. Chase said he did so to avoid the distractions of Paris. "I loved the boulevards so much that I decided to do my work away from them," he reminisced years later. Forty other Americans were attending classes in Munich when Chase arrived.

A Munich style prevailed at the academy—studio works rendered in dark, lush colors and characterized by bold brushwork. The teachers held up the works of Diego Velázquez and Frans Hals as the ideals. Chase was wary at first of "these dark, terrible things" but learned to embrace them and mastered the technique.

Chase soon began to attract attention and to make some significant sales. He sent his *"Keying Up"—The Court Jester*, a wonderfully comic portrait of a dwarf in an exotic jester's costume pouring a nip of drink before performing, to the 1876 Centennial Exposition in Philadelphia and won a medal of honor. One critic called the work "another example of the genius of that rising young American artist."

A LANGUID, BOHEMIAN POSE

BUT AFTER THE BOUNTY FROM HIS St. Louis patrons ran out, Chase found it difficult to support himself. He moved to Venice with two other artists for nine months but struggled to keep above poverty. He finally accepted a job teaching at the Art Students League in New York and returned to the United States in 1878.

Will Chase, as he was known, soon made a prominent place for himself in the art establishment of the city. He was congenial, popular and talented, lauded by critics, respected by students and admired by colleagues. A photograph taken when he was about 30 years old reveals a handsome man with piercing eyes, prominent nose and a thick mustache and beard, wearing stylish clothes and striking a languid, Bohemian pose.

But it was his studio that made Chase a celebrity. He rented a suite with a two-story gallery at the Tenth

Chase captured a sense of immediacy and movement in his spirited 1890 portrait of the Spanish dancer "La Carmencita."

Street Studio Building. The space had once been used by Albert Bierstadt to paint enormous Western landscapes. Trying to mimic some of the studios he had seen in Europe, Chase filled his rooms with treasures—to serve as props, subjects for still-life painting and inspiration for the artist. The hoard included Japanese fans, East Indian drums, a Zulu shield, paintings, tapestries, Italian swords, Phoenician glass, ornate frames, antique books, 37 Russian samovars, a bust of Voltaire, and a large stuffed flamingo.

Chase held open house on Saturdays, invited his students and fellow artists there often, and hosted numerous soirees, including costume parties. Illustrations of the studio were featured in art magazines. Chase himself painted canvases depicting aspects of the studio, and Henry Adams and other novelists employed it as a setting for their fiction.

A celebrated use of the studio came about when the American expatriate painter John Singer Sargent, begging pardon for his "cheek," asked if he could stage a performance there by the Spanish dancer "La Carmencita." Sargent, who was on an extended visit to the United States, told his patron, Mrs. Isabella Stewart Gardner of Boston, that Chase had "a capital big place." Sargent hoped that Mrs. Gardner would buy his portrait of La Carmencita after seeing her perform. He would pay for the food and wine, Sargent told Chase, while Mrs. Gardner would pay the dancer's fee.

Accompanied by her guitarists, the performer showed up near midnight with heavy theatrical makeup. Sargent and Chase infuriated her by wiping it off and brushing her hair. One of Chase's students wrote that La Carmencita's dance was "the most wild and primitive thing I have ever seen. . . and the most artistic." But the dancer made some obscene gestures, and Sargent's patron never bought his painting. The artist J. Carroll Beckwith summed up the evening in his diary: "It was a stiffish company and it did not go well."

AN ESSAY IN MOTION

CHASE, HOWEVER, HIRED LA CARMENCITA for more performances and persuaded her to let him paint her portrait. The second evening, said a guest at both, was "far more jolly." The portrait, an essay in motion, was one of Chase's finest and now hangs in the Metropolitan Museum of Art in New York City.

Chase and several artist friends traveled to Europe every summer from 1881 to 1885 to study the old masters in the museums, keep abreast of the latest in European art, and meet well-known painters living there. On one trip Chase called on the American expatriate James McNeill Whistler in London, and they quickly became friends. Dubbing Chase "Colonel," Whistler suggested they paint portraits of each other.

But Whistler was too egotistical to keep a friendship very long, and he was soon quarreling with Chase. "My dear Colonel," Whistler would snap, "I'm not *arguing* with you; I'm *telling* you." On a short trip to Belgium and Holland, Whistler apparently badgered his younger friend. "A gadfly could not have been more persistently and maliciously annoying," Chase wrote later. He escaped by grabbing his baggage and getting off the train.

Whistler evidently never finished his portrait of Chase, but Chase exhibited his portrait of Whistler in the United States. Painted in the subdued colors that Whistler himself favored, it showed an imperious man balancing a finger on a walking stick and peering down on the rest of the world. The painting was inscribed, "To my friend Whistler." Whistler called the portrait "a monstrous lampoon." But the picture, now in the Metropolitan Museum of Art, is probably the best-known likeness today of the flamboyant artist.

Great changes in lifestyle and career loomed for Chase after he returned from Europe at the end of the summer of 1885. For years he had been a frequent guest at the home of Julius Gerson, the manager of the art department of a lithographic firm and a friend of many New York writers, musicians and artists. Gerson, a widower, had a son and three beautiful daughters; the youngest, Alice, was only 13 when Chase first met them. The daughters sometimes served as models for Chase, and he gradually became infatuated with Alice, whom he called Toady.

During their courtship, Alice, by then 20, became pregnant, and she and Chase, who was 37, were married in February of 1887. Their first child, a girl, was born the next day. It was obvious that Chase had put off marrying his love until the last moment.

Gallati, the curator of the current Chase exhibition, believes that he was caught in a dilemma. On the one hand, a wife and child "conflicted with the public image of cosmopoli-

METROPOLITAN MUSEUM OF ART, GIFT OF SIR WILLIAM VAN HORNE

tan sophistication that he was so industriously constructing for himself." Yet, a refusal to marry the mother of his child would cause a scandal and harm "his reputation and therefore his prospects for professional success." Alice, a beguiling beauty, would become his most important model.

Chase faced a crisis in his career at the time of his marriage. The critics were growing tired of his rendition of the Munich style, with its dark colors and indoor scenes. "The public has looked in vain for original ideas in the composition of his works," said the reviewer for the *Brooklyn Daily Eagle*. Another writer admonished him "to stop and inquire of himself seriously—whither does it all lead?"

The critics wanted something more American from their American painters. Chase's sales were slowing while the cost of his travels and the continual furnishing of his studio mounted. So he set out to please the critics and boost his sales by changing the way he painted.

"BE LIKE A SPONGE"

WITHIN FIVE YEARS, HE TRANSFORMED himself, says Gallati, into the first American Impressionist painting scenes of American life. The show organized by Gallati focuses on this period.

There were two distinguished American Impressionists already—Mary Cassatt and Childe Hassam—but both were painting European scenes in Europe. Chase knew Impressionism well from his travels in Europe and his meetings with artists there. In fact, he had helped introduce the works of Impressionists such as Edouard Manet and Edgar Degas to America when he was involved in organizing a special exhibition in New York to raise funds for a pedestal for the Statue of Liberty.

He had no qualms about borrowing techniques from others. "Be like a sponge, ready to absorb all you can," he told his students. ". . . I have been a thief; I have stolen all my life—I have never been so foolhardy as to refrain from stealing for fear I should be considered as not 'original.'"

Chase, carrying small canvases and his easel, wandered through the parks of New York and Brooklyn and into Brooklyn's Navy Yard to catch scenes with his new technique. Sometimes it is hard to distinguish his work from that of the French Impressionists. In *Boat House, Prospect Park* (p. 90), for example, Chase is entranced by the light and the reflections shimmering

PARRISH ART MUSEUM, WILLIAM MERRITT CHASE ARCHIVES

Chase's elaborately furnished Tenth Street studio was described by one writer as "a fitting frame" for the clever and refined artist.

on the surface of the water. It was no accident that Potter Palmer and his wife, Bertha, the Chicago collectors of French Impressionist art, purchased this painting.

For the most part, Chase did not mimic the works of his European Impressionist models as closely as he did in *Boat House, Prospect Park*. But he did leave his Munich style far behind. He used much lighter colors, tried his hand at shorter, Impressionist-like brushstrokes, diffused features instead of delineating them exactly, and painted in the open air rather than in his studio. What resulted were American landscapes as exquisite as their European counterparts.

Large urban parks were a new phenomenon in American life. Frederick Law Olmstead and Calvert Vaux had designed Central Park in Manhattan and Prospect and Tompkins parks in Brooklyn, and Chase's paintings showed Americans what those parks were like. But though geographically realistic, they were idealized views. Chase did not like to paint crowds. He would focus instead on one or two figures, who were usually well-to-do and fashionably dressed.

In one of Chase's best-known paintings, *A City Park*, for instance, a woman in a pink dress, black jacket and straw hat is seated on a park bench, looking sideways at someone outside the scene. A viewer must peer far beyond her into the distance to make out the activity in the park: players by a net, male and female onlookers, a woman strolling with children. But they are all only a dim background to the stylish woman on the bench and the flowered shrubbery alongside her.

BEAUTY IN THE MUNDANE

ALTHOUGH CHASE PRODUCED FAMILY scenes, he also depicted the beginnings of freedom for modern women. Women are often seen walking by themselves, neither leading children in tow nor leaning on the arm of a male escort. This was still an unusual sight for respectable, upper-class American women in Chase's day.

Sometimes Chase rendered beauty out of mundane scenes. His parents had moved to Brooklyn, and Chase may have used their backyard as a setting. In *Wash Day–A Back Yard Reminiscence of Brooklyn*, for example, he plays with light and shadows.

Chase earned extraordinary praise from the critics. "Nothing in all the artist's work is better than these flashing jewels," wrote a reviewer in the *Chicago Tribune*. The paintings, he went on, "give the lie to the familiar moan of many American artists, who persist in painting much bepainted Holland because there is nothing worth painting in America."

The critics were so pleased with the American subject matter that they did not mind that Chase's new technique was mainly French. These early Impressionist works, painted from 1886 to 1890, marked a major breakthrough for the artist and the maturing of his genius.

Despite his fame, Chase never amassed fortune enough to give up teaching. His costs—augmented by his travels, his profligate purchase of paintings and other treasures for his studio, and the needs of a growing family (there would be eight surviving children)—always outweighed his income from painting alone. In 1890 he accepted an offer from prominent New Yorkers to head the new Shinnecock Summer School of Art for Men and Women in the Shinnecock Hills near Southampton on the eastern end of Long Island. He and his family moved into a summer home there designed by the architect Stanford White.

Chase taught and painted at Shinnecock, which became the best-known art school in America, for 12 summers. During that period, according to Nicolai Cikovsky, Jr., a curator of American painting at the National Gallery of Art in Washington, D.C., Chase produced "some of the most splendidly beautiful and most perfect landscapes ever painted in America." As a location associated with wonderful landscape painting, Shinnecock became as well known as Barbizon or Giverny in France.

Chase was one of the most re-

The bright colors, broken brushstrokes and plein-air technique of Chase's *Boat House, Prospect Park* (c. 1888) give the work a distinct Impressionist look.

PRIVATE COLLECTION

Wash Day—A Back Yard Reminiscence of Brooklyn (1886) is distinguished by its dramatic perspective and vibrant patterns of light and shadow.

ANONYMOUS COLLECTION

nowned art teachers of his day. In addition to Shinnecock and the Art Students League, he taught at the Brooklyn Art Association, the Pennsylvania Academy of the Fine Arts and the Art Institute of Chicago. "William Merritt Chase's teaching, like the British drumbeat," said the *Chicago Post*, "is heard round the world." He also founded the Chase School of Art (now the Parsons School of Design) in New York and taught there for 11 years. He was so well liked by his students that in 1902 a group of them commissioned Sargent to paint a portrait of Chase that they donated to the Metropolitan Museum of Art.

The roster of his students who would mature into distinguished artists was long and included such luminaries as Georgia O'Keeffe, Edward Hopper and Rockwell Kent. "It seems to me that half the people I studied in my American art history courses," recalls Judith Barter, curator of American art at the Art Institute of Chicago, "had studied with Chase, at least for a while." O'Keeffe, describing Chase's teaching methods, said, "There was something fresh and energetic and fierce and exacting about him that made him fun." Hopper used to note on his business cards that he had been a student of Chase's.

Chase's teaching duties did not slow down his artistic production or exploration. He became fascinated with the sheen of the skin of dead fish, and he started depicting them in his still lifes. While working in London, he passed a fishmonger's stall and noticed a large cod lying on a clean slab of white marble. "Whatever my mood for color that morning," he recalled, "that fish completely fitted and filled it." Chase persuaded the fishmonger to rent him the cod for a short spell. It took him only five hours to paint *An English Cod*, his best-known still-life painting. The shopkeeper was so impressed with the work that he charged

Chase only a shilling for the rental.

Tastes and reputations in art swing over time like a pendulum, and Chase no longer has the same adulation that he did when he died in 1916 at the age of 66. "I'm amazed," says Barter, "at the number of people who say they've never heard of him." In art history classes these days, there is not much room for him alongside giants like Winslow Homer, Thomas Eakins, Whistler and Sargent in the canon of 19th-century American art.

His reputation suffered partly because he was regarded as a defender of old-fashioned ways. He could not fathom what the modernists of the 20th century were up to. He derided Henri Matisse as a charlatan, and the sale of his paintings as a "gold brick swindle." He proposed that Cubist paintings hang upside down—if anyone could figure out which way was up and which down.

A DARING USE OF SPACE

SOME DETRACTORS BELIEVED, AS ONE put it, that Chase was simply a "wonderful human camera," putting down what lay before him, without adding insight or imagination. The daring use of space in a painting like *Hide and Seek* (below), defends Chase against such criticism. But the Brooklyn Museum's Gallati acknowledges that other great American painters "have a certain gravitas that you don't find in Chase—it is there sometimes, but it's not there consistently."

Nevertheless, Gallati acclaims Chase's power to create beauty in an astonishing number of landscapes, portraits and still-life paintings. "While he is not in the American canon," she says, "he deserves to be."

Washington-based author Stanley Meisler is a frequent contributor.

In *Hide and Seek* (1888), Chase adopted the asymmetrical composition and dynamic use of empty space and foreshortening that was the hallmark of such avant-garde artists as Whistler and Degas.

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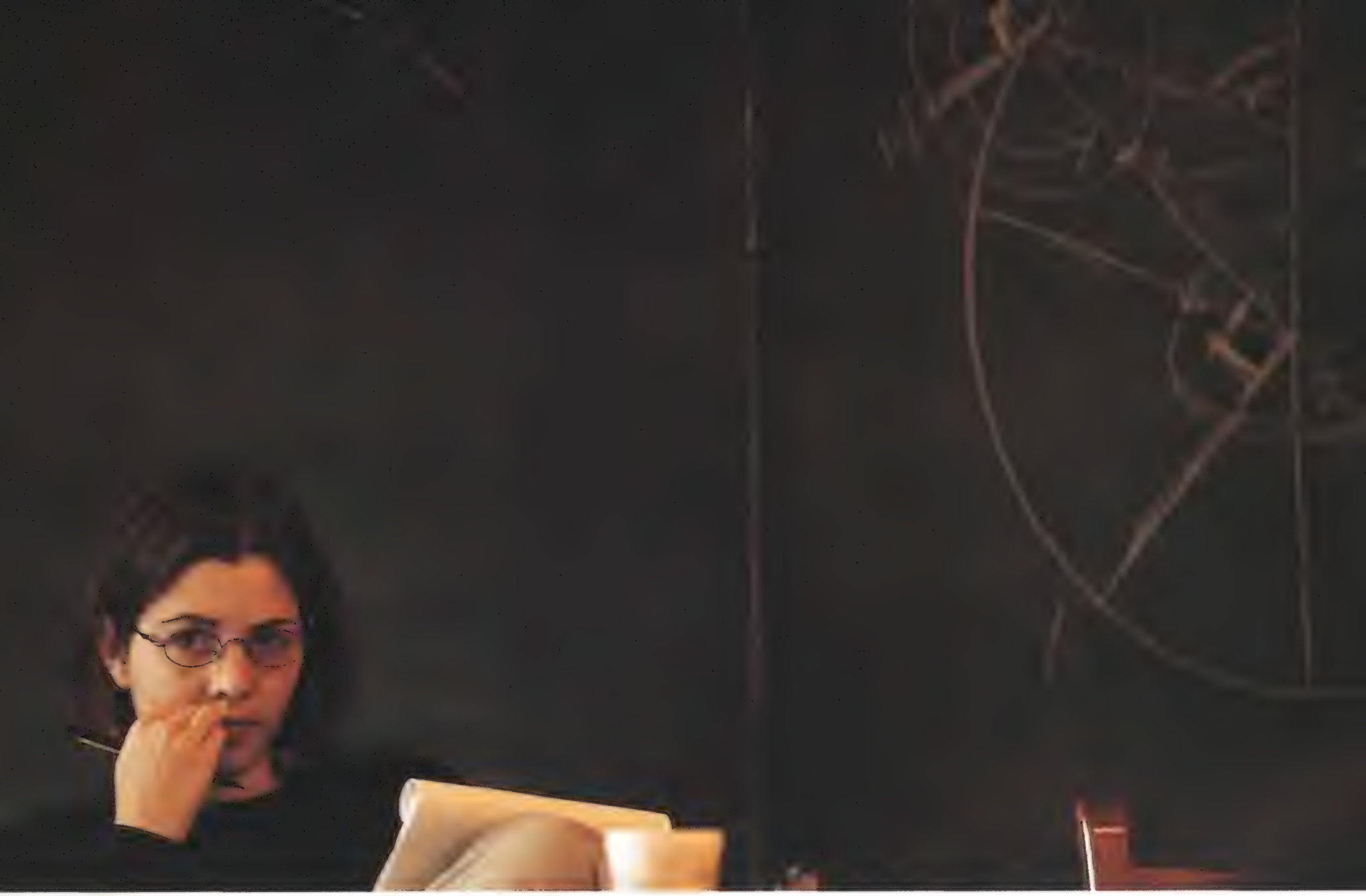
St. John's college students absorb classical texts in a relaxed setting (above) and defend theses before tutors (inset).

BY EDWARDS PARK

PHOTOGRAPHS BY CAMERON DAVIDSON

Where Plato Is Your Professor

GRADUATING FROM ST. JOHN'S COLLEGE IN ANNAPOLIS, MARYLAND—OR SANTA FE, NEW MEXICO—GUARANTEES A PLACE IN THE REPUBLIC



Sophomore Whitney Welsh of Uniontown, Ohio, listens intently during a mathematics tutorial.

A SCORE OF BODIES LIE STREWN ACROSS A BROAD, GREEN lawn. A moment's consternation. Then, of course. This is an American college campus in springtime. Where else would the students be but sprawled on the sun-warmed grass, chatting, laughing, twitching convulsively to the rhythmic beat in their earphones? But there's something wrong here. They're all so quiet. Only a murmur of low-voiced conversation.

Good God! *They're reading books!*

A discreet detour to pass closely a young man stretched on his back reveals the title of his book. Not familiar—nor easily pronounced: *Epictetus*, and under that, *Discourses*. Veer toward a girl with honey-colored hair, and gather the courage simply to ask, "What are you reading?" She smiles, delighted that anyone cares. "*Meno*," she says. "You know . . . Plato. I went back to it to look something up. I'm really on Pascal." Try a lad seated on the steps of a neo-Palladian-style building, and he looks up, probably a bit annoyed by the distraction, but too polite to show it. Instead, he shows the book: Einstein. Another youth, propped against an elderly tree, is also reading Einstein, but another translation. "We have to read both," he explains. And a pretty girl, surely no more than 17, curled on the grass nearby, readily admits she is only a freshman. The book that so absorbs her must be that just-released Harry Potter. Wrong. It's Euclid's *Elements*, released 2,300 years ago.

So goes an informal survey of a few students at St. John's College in Annapolis, Maryland. It's a small institution, and old. Its main building, an imposing structure with a lofty cupola, was begun in 1742 as a mansion for Maryland's colonial governor, Thomas Bladen. Money for it ran out, it became known as "Bladen's Folly" and rot set in until its rebirth as the college's McDowell Hall. It now dominates a cluster of mellowed buildings on grounds almost as well-bred as an English lawn.

Old St. John's may be, but its curriculum is far older—yet startlingly new. This little college requires its students to read and discuss the best works by the best minds throughout 2,500 years of Western culture. In small tutorials, they thoughtfully discuss with a tutor and with one another the assigned pages for the day. In the larger seminar, the conversation digs deeply into the great

"Our faculty has to cover the full range of our classes, so we look for people willing and able to teach across the curriculum."

work that they are reading at the time. In laboratory, they carry out experiments that first taught us the facts about our world.

There are only 450 students here. A newer, second campus in Santa Fe, New Mexico, adds another 450. But the college has a relatively enormous faculty of tutors—one to about eight students. That's right—tutors. No one is called a professor at St. John's.

"Our faculty has to cover the full range of our classes," says Christopher Nelson, president of St. John's. "So we look for people willing and able to teach across an entire curriculum. They have to put off their pet projects until, maybe after ten years of hard work, they can save time enough to write that book."

Nelson, a graduate, the son of a graduate and the father of "Johnnies," has an almost innate understanding of the program. "Dad used to hold a seminar at home when I was in high school. That gave me a taste for St. John's," he recalls. "I got pretty sick of the classroom lectures at school, and couldn't wait to get started here with the real thing."

The real thing can be witnessed by outsiders, but they won't fully understand what's going on unless they've retained an inordinate amount of Classics 101. They will see, however, the interplay between well-verified yet diverse opinions that add up to a St. John's liberal education.

If you visit a tutorial—let's say the subject is Aristotle's *Physics*—you'll sit a little away from a plain wooden table in an unadorned room. There cluster about nine students and a tutor. They will likely be dressed any which way, but they all look "scholarly": intense, engrossed, a tad older than their ages would indicate.

As usual, the tutor kicks off with a question: "What's your feeling about the way the concept of motion comes across here?"

Long silence. Then a tentative but carefully worded response from a boy. He's quickly challenged by another boy: "I don't find that wholly substantiated in this episode." A girl picks it up, reddening: "But it *is* substantiated by Sophocles. Look at that place in *Oedipus Rex*." And so it goes—a general conversation with varied opinions and ideas, validated by all the texts they have all read.

Students and tutor address each other courteously and usually with the formal "Ms." or "Mr." All speak softly. Everyone at St. John's, from the president down, speaks softly, sometimes infuriatingly so.

A query from the tutor does not produce a snappy answer, designed to assure an assistant professor that you've done the assignment and therefore rate a little green check mark beside your name. There's no marking here. Instead, questions produce that long silence. These people need time to think, and it's understood that they must take it. The answer comes in a thoroughly considered and well-constructed sentence or two. The tutor asks few questions, and listens carefully to all the answers, to learn from them along with the students. If a conversation drifts too far off course, the tutor imperceptibly steers it back. Otherwise, it's hands off.

Seminar takes place on Monday and Thursday nights between eight and ten, when young people are wide awake and ready for action. They get it in a group double the size of a tutorial, with two tutors. The questions tend to be big here, and the assignments leading up to them may vary from 20 pages of Descartes to 250 of George Eliot's *Middlemarch*. A tutor's mention of those battles over the bodies of Patroclus and Hector, in the *Iliad*, leads to a discussion of significant traditions of death from Homer's time to today, carried on almost entirely by the students. And again, if a conversation veers too far, one of the tutors tweaks the reins.

After 70 minutes of tutorial, or two hours of seminar, a bell rings in the cupola of McDowell. But there's no wild dash for the door. Instead, a student says, "Let's see the Greek on that last bit," and all scan their books—Greek on the left, English on the right—for another five minutes after the bell's echoes have died away. Then all relax and rise from the table, jabbering freely (often in modern American), laughing, all a bit drained, all strangely elated. If rain has started falling during the class, the young women do not go out shielding their hair with their books. This is St. John's.

St. John's suddenly became the "Great Books College," stirring high interest, mostly friendly, throughout the world of education.

Here everybody shields the books.

"Those classes belong to the students," says President Nelson. "New faculty members must learn to give up control. We really mean it when we say, 'The following teachers will return to St. John's next year.'"

He's quoting the clever blurb on a St. John's admissions brochure that goes on to list the teachers: Homer, Aeschylus, Sophocles, Thucydides and a hundred more, rising from classical times through the Dark Ages, the Renaissance and up to such moderns as the American poet Wallace Stevens. These make up the basic faculty of St. John's College.

At its Santa Fe campus, opened in 1964, St. John's offers precisely the same program in a diametrically different environment. Instead of the Chesapeake Bay, sometimes still and foggy, sometimes roiled by gales, students view the Sangre de Cristo Mountains, clean and clear in the dry air for some 300 days of the year. True, both towns are state capitals. But instead of neoclassical buildings reflecting cool British-colonial formalities, these Johnnies live in and among adobe buildings tracing the Spanish-colonial legacy of New Mexico and bask in the quick warmth of Western manners. The exchange of students between the two campuses for a year is carefully worked out in a loose formula. The best of the upper classes rate some priority, but everyone has a fair chance as long as the numbers of transferees from the East come out about the same as those from the West.

The school's formidable, fascinating educational method got started in 1937 and made little St. John's famous for the first time in its long life. The sign beside the main entrance, on tree-shaded College Avenue, suggests a founding date of 1696—thus supplanting Yale as the country's third oldest college. That's based, however, on the foundation of King William's School for colonial boys. In 1784 this new college was founded. Since it had strong Masonic backing, it was likely named after the Masons' patron saint, John the Evangelist. It absorbed King William's School and kept it going for a while. Francis Scott Key went to both schools. As an early Johnny, he learned enough to write a good song for his country.

Maryland originally thought of com-

In an annual croquet match between the neighboring campuses, a United States Naval Academy "mid" (left) and a "Johnny" (right) characterize the schools' styles.

St. John's students and alumni enjoy a traditional waltz party in the Great Hall, once the scene of a ball in honor of the Marquis de Lafayette.

bining St. John's with Washington College, across the Chesapeake Bay in Chestertown, to form a state university. It didn't happen. With only a pittance of state aid, St. John's struggled on. Annapolitans generally liked having the students in town, even though the Johnnies sometimes raised their noses from the grindstone and toured the local taverns.

The Great Depression brought St. John's to its knees. It was on the point of closing its doors in the 1930s when two extraordinary scholars and teachers, Scott Buchanan and Stringfellow Barr, were invited to the college. They sized it up as perfect for trying out a newly envisioned course of study—a curriculum consisting entirely of the compulsory reading of carefully chosen books—books read by generations of scholars from the earliest emergence of Western culture, books that shaped basic concepts of Man and his world, books still applicable to life today. *Great books.*

Scott Buchanan had long been thinking that reading and discussing a hundred or so great books would offer a true liberal education. Other teachers agreed, notably the much admired Mortimer Adler and Mark Van Doren of Columbia University, Buchanan's old friend and fellow Rhodes scholar Barr, and Robert Hutchins, president of the University of Chicago, who was already trying to set up such a program.

Buchanan learned about the little college in Annapolis: broke, bewildered, but with fine facilities and beautiful grounds—the ideal laboratory for the great experiment. Deals were fashioned, and he and Barr took over. In the fall of 1937 they greeted 45 freshmen, 20 of whom chose the new program, and set about getting their great books. By 1941, St. John's was a wholly different college: no electives, except for lectures and events outside the curriculum; no marks—though a record of them is now kept, locked up, for possible use in entering a graduate school. Half-forgotten St. John's suddenly became the "Great Books College," stirring high interest, mostly friendly, throughout the world of education.

The *New Yorker* teased it gently with a poem, "On The Gospel According To St. John's," by William W. Watt:

My knowledge of Lucian
Is quite Lilliputian,
I'm feeble on Gibbon and Hume,
I couldn't finagle
A study of Hegel
From now to the trumpet of Doom—
Do I have a true education today?
Nay!
The course at St. John's is the liberal par,
All other curricula foreign
Say Hutchins and Adler, Buchanan
and Barr,
And Van Doren. . . .

And so on.

In 1951 women students arrived—long before the "Ivies" got around to accepting them. Much of the press, unused to institutions going coed, greeted this innovation with the inevitable leers. And many outsiders decided, with nudges and chuckles, that the girls came only to be next door to the United States Naval Academy. Midshipmen, marching past the St. John's campus on their way to their football stadium, used to order "Eyes right!" if a pretty Johnny was watching. But when the academy went coed, too, both schools contented themselves with the traditional hurling of hard candies at each other.

Rivalry between the two Annapolis institutions isn't serious. After all, the academy has ten times more students than the college, so comparisons are meaningless. Johnnies jog around the academy and may pause to watch football practice or a parade. "Mids" walk over to College Avenue to hear lectures or concerts, and of course show up at parties.

But the great interface between the two schools is the annual matchup for the Annapolis Cup. This hard-

In 1951 women arrived. Much of the press, unused to institutions going coed, greeted this innovation with the inevitable leers.

fought contest is one of St. John's few outside competitions and the only time the Johnnies meet the Mids on a playing field before a cheering crowd. And what's the game? *Croquet!*

It all started in 1982 when, at the rally before the Army-Navy football game, a rather brash Johnny got talking with one of the Naval Academy honchos, pointing out that St. John's, back in the 1920s and early '30s, used to beat Navy in lacrosse, sometimes even in football. The officer agreed, but added that now Navy would certainly rout St. John's in any sport. After thinking about that for a while, the Johnny challenged the brigade of midshipmen to a croquet match. Navy accepted. St. John's beat them soundly and established an annual Annapolis springtime gala, complete with picnicking, chilled champagne, music and a waltz cotillion.

The academy team, always picked, for some arcane reason, from the "Firsties" (seniors) of the 28th Company, shows up in special uniforms, usually varying from year to year. Picture a midshipman in white pants, dark blue blazer with a pink bow tie and a pink ribbon around a straw boater, and you get the idea. The St. John's players, true to school tradition, may wear anything from Charlie Chaplin's hobo attire to Fred Astaire's top hat, white tie and tails.

This is the Johnnies' only big outside game, and the crowd has too good a time to pay much attention to it. Better to eye the spring fashions with elegant extras—a lace-lined parasol matching the trim of a long white dress; vastly broad-brimmed hats adorned with spring flowers; and for the men, startling combinations of informality and dinner dress—blue jeans with tuxedo jacket, perhaps.

The croquet? Only the scorekeepers know who's ahead. Surprisingly, Navy seems to have won four times in 18 years.

Many Johnnies, like senior Jennifer Reitz of Worcester, Massachusetts, enjoy rowing on adjacent College Creek and the Severn River.

Though croquet obsesses the Johnnies every spring, many other sports—mostly intramural—flourish at St. John's. The old days of respectable football teams and three world championships in lacrosse—as prominent in Maryland culture as steamed crabs—are long gone. But today the St. John's boathouse on College Creek is crammed with shells used in both men's and women's races—single- and double-scull, also pairs, fours and eights. They race one another on the Severn, and often take part in outside club races. "They do pretty well," says Leo Pickens, who, as "Jock Tutor," coaches and teaches every sport the college offers. "It's surprising how many good athletes come here to read books."

Yes, the occasional high school jock, even an ex-Marine, shows up in an incoming freshman class of mostly bookish intellectuals. "They pick us as much as we pick them," says Jeff Bish-

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Seniors must defend their essays before a committee of three tutors in the college's dreaded oral exam. Actually, it's not dreaded at all.

op, vice president of the college. "We recruit, like other colleges, and guidance counselors tell the bookworms about us, but when a bright high school kid finds out we have no athletic program, no fraternities or sororities, that we are dead serious about education, with a required curriculum, evening classes, hard texts that must be read, and that they must write a heavily weighted essay as part of their application . . . well, that weeds out a good many of them. We know that those who apply really mean it."

People who face heavy demands develop a soaring esprit de corps. Jeff Bishop tells of a senior writing her final essay, the vital, ultimate work, planned for four years. A senior must turn it in before midnight on a certain day in February.

"This girl had her essay nearly done, but she lost it when her computer crashed. Tried everything. Couldn't dig it out. Four of her friends took over, parceled out her notes, and retyped the whole thing with her. She almost made the deadline, but not quite. And she was excused. The faculty felt that the devotion she inspired—among friends and to the college and its ways—was more important than a deadline."

Seniors must defend their essays before a committee of three tutors in the college's dreaded oral exam. Actually, it's not really dreaded at all—just very formal and traditional. Each senior appears on time at the Barr-Buchanan Center, slips on an academic gown and enters a large, carpeted room where three tutors, the student's committee, await. The senior is presented to the committee chairman as a candidate for a B.A. They sit. So do friends who have come to watch. With cleared throat and presumably clear head, the student reads a précis of his or her essay. Then the committee takes over, prying, probing, suggesting. They're not unfriendly, but *very* thorough, for this is the culmination of four years of reading and conversing. When the hour ends, outsiders as well as the players in the drama share that special elation over a period of time—*un*wasted.

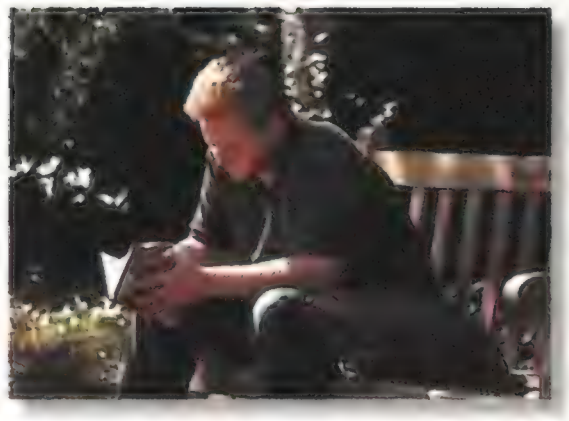
Essay topics vary widely. Graduates of May 2000 wrote about *The Foundation of Practical Reasoning in Aristotle's Nicomachean Ethics* and also *Undressing Lemuel Gulliver . . . Seriously, It's Not Funny*, among many others.

Of course, a few students fail to live up to standards or to cope with the work burden, and have to leave. "But our retention rate is around 68 to 70 percent," says Bishop. He says that those who put in the required effort and show thoughtful, logical participation in classes are suitably rewarded. How? "We let them stay."

Since 1937 the great books have raised a great question in the minds of outsiders: "What good does studying them really do these days? Where does this education get you?" Scott Buchanan answered that by reminding us that a great book is the product of the liberal arts, and "the aim of the liberal arts is insight, understanding, imagination, and finally the transformation of the student into his own teacher. . . . " And Stringfellow Barr, well before moving to St. John's with Buchanan, experienced a scholarly sort of epiphany when he read, carefully, the dialogues of Plato and

Student Sylvaine Rameckers, facing, and three members of the St. John's faculty show how senior oral exams are done.

"... the aim of the liberal arts is insight, understanding, imagination, and finally the transformation of the student into his own teacher."



Euclid's elements of geometry, and was profoundly affected. Many factors led him to take the reins at the college, but he noted in an interview, "I accepted the presidency of St. John's because I felt if those books could do that for me they could do it for the dumbest freshman in America."

Ask graduates about the effect the college had on them, and the answers are revealing. A doctor echoes Buchanan: "The program teaches you how to teach yourself." A television producer feels the habit of careful, complete, critical reading has helped him enormously. "I can distinguish where the facts diminish, and the 'spin' begins. . . . Reading lets you see old issues returning again and again. I left St. John's with a feeling of being well-founded."

A building contractor discovered a latent love for music and, with a Johnny's typical self-assurance, found time in his building schedule to teach it at a preschool. A biologist was so poorly taught in high school science that she would never have taken it at an ordinary college. At St. John's she had to read Harvey, Darwin, Lucretius and many other science classics, and do the laboratory sessions. She loved the combination of theory and hands-on learning, became a lab assistant and, because of many college connections, got into the work she wanted—marine biology. A young editorial assistant says leaving the college baffled her at first. "I found I had too many options. I was used to having no electives. And employers were used to applicants who had followed a straight line in college—a major aimed at a career. I'd been all over the place."

On the other side of the coin, a lawyer, who loves every memory of St. John's, disputes its worth as a preparation for law school. "In my day there wasn't enough writing," she says. "We learned to communicate, but not to *persuade*." But in the kind of law she practices, civil rights, "I need to see a big picture, in human and political terms, and find the essence of the story I'm faced with: what's the justice, here? I can see where the great books helped in that."

She had trouble in law school because it requires so much memorization, and also, "I had little facility for taking tests. We had nothing like these at St. John's." Like all Johnnies, this one had been reading slowly and with great care for four years. She's not the only one who, in the high-speed world beyond College Avenue, had to learn to read fast, to scan.

Employers in scientific fields are often surprised by applicants from the great books program. How can they feel that reading Aristotle qualifies them for a job that demands a background in math and physics? Yet, says Jeff Bishop, 40 percent of the St. John's curriculum is science.

A recent poll breaks down the figures on placement of alumni: about 17 percent in "communication and the arts," which takes in journalism, TV and film; 9 percent in law; 7½ in health services, which includes doctors; a few more in computers and sciences. One-fifth have simply gone into business and are doing very well. A survey of colleges and universities determined how many leaders in every field they produce relative to their size. St. John's ranked 30th. Not a bad record. There are more than 1,400 four-year colleges in this country.

Annapolis has always thought its own little college quite wonderful. But during the social revolution of the '60s, staid Annapolitans were forced to add the word "weird." Few places east of San Francisco embraced hippiedom as enthusiastically as St. John's.

Jeff Bishop calls this the "grunge factor" and is sure it's not as bad as in other colleges. "Of course, next to the midshipmen, our kids look as though they came from Mars." But he recalls a town lady's words: "Thank goodness for St. John's! If it weren't for the college, everyone in Annapolis would look alike."

The makings of St. John's College lie deep and perhaps are best clarified by comparing it with its younger, bigger Annapolis neighbor, the Naval Academy. They're alike in some ways but nearly 180 degrees apart in basic purpose. The academy is hard to get into, and pays its students to attend. They leave it mentally, physically and morally fit to risk their lives in defense of the United States. They have job security, even after retirement. One of them—Jimmy Carter, for example—could even become President of the United States.

St. John's is also hard to get into but charges a hefty tuition. Its graduates leave with an inner security that comes from intellectual maturity. They've already met the reality of human existence from their four-year immersion in the growth of Western culture. A Johnny, too, could become President. Maybe that wouldn't be a bad idea.

Annapolitan Edwards Park wrote recently on "Johnny" Francis Scott Key. Cameron Davidson shot November's Conservation and Research Center story.

The House *That* John Built

JOHN CHURCHILL, TOGETHER WITH HIS AMBITIOUS WIFE, SARAH, CREATED BLENHEIM PALACE TO FOUND A DYNASTY. TODAY, IT'S A DESTINATION

BY RICHARD CONNIFF ◆ PHOTOGRAPHS BY MICHAEL FREEMAN

THE FIRST TIME I SAW BLENHEIM PALACE WAS BY ACCIDENT. MY HOTEL in Woodstock, a small town a few miles north of Oxford, England, was just a handy stop on a business trip, and I set out on a walk before sunset, past old stone town houses with cobbled roofs and brightly painted doorways. The street swung left into a cul-de-sac enclosed by a high stone wall. I hesitated a moment, then walked through an archway and stopped, breathless. Off to the right, in the middle of a vast private park, a lake perfectly mirrored the triple arches of a monumental bridge. Beyond, in the distance, stood Blenheim, a mass of columns, arches and towers, the stone glowing like honey in the evening sun, golden spheres on the rooftops glinting against a bruised April sky.

It was arguably the "finest view in England," as a 19th-century Churchill, whose family still owns the place, once boasted: three acres of house (seven if you count the courtyards), 187 rooms (plus 33 in the bridge), a 2,100-acre park landscaped by Lancelot "Capability" Brown, enclosed by a stone wall

More than 250,000 tourists visit Blenheim each year. It was conceived as a monument to the most famous Churchill of all, John, the first Duke of Marlborough, who led British troops to victory over the French in 1704. Unlike many generals, Churchill didn't hesitate to station himself in the thick of battle, sometimes even leading cavalry charges.

John and Sarah Churchill were well matched. He rose from poverty to the peak of power by demonstrating shrewdness at court and on the battlefield. She was equally shrewd when it came to manipulating others. Both craved money, power and fame. Blenheim's ostentatious excess fed their egos but also fueled envy and contempt.

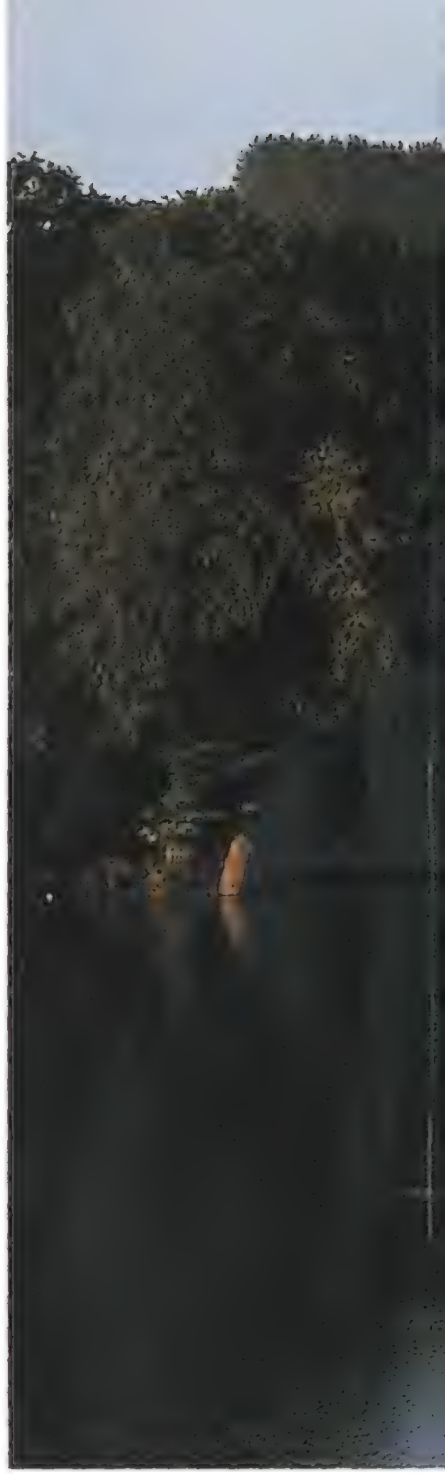
nine miles long, altogether so grand that King George III once remarked, "We have nothing to equal this."

Grandeur and envy being near of kin, Blenheim was also one of the most reviled buildings in all of England, and by some of the most scathing critics, among them Alexander Pope ("the most inhospitable thing imaginable, and the most selfish. . . "), Horace Walpole ("execrable within, without & almost all around"), François Voltaire ("*une grosse masse de pierre, sans agrément et sans goût*"—"a great pile of stone without harmony or taste"), Noël Coward ("Woke frozen. Shaving sheer agony . . . loo like an icebox").

The Churchills themselves (or at least their wives) have at times denounced Blenheim Palace as the "dump" and "that wild, unmercifull house," and with good reason. No house anywhere has ever put its mark so thoroughly on a family's collective soul. Built between 1705 and 1722 to glorify John Churchill, one of England's greatest military heroes, Blenheim instead helped ruin his reputation with its sheer egotistic excess. Built to found a dynasty, Blenheim instead turned succeeding generations into madmen, scoundrels, snobs and gold diggers (the better to keep the roof overhead, and to gild the plasterwork lilies). And yet the arrogant mythology of the place worked. If the owners were, at best, ordinary men and women, it was often hard to notice, given the ostentatious way every stone declared their majesty. At least once in 300 years, Blenheim also redeemed itself by producing someone worthy of the place. Winston Churchill, one of the greatest heroes of the 20th century, was born at Blenheim, the grandson of a duke, and he got his sense of destiny there. "We shape our dwellings," he once wrote, "and afterwards our dwellings shape us."

So when I returned recently to learn more about Blenheim, where salespeople now dine at corporate banquets and Sly Stallone held his wedding reception (the public rooms have rented for as much as $22,000 an evening), it was with mixed feelings—awe, envy, regret for faded grandeur, and a dollop of democratic delight in tales of aristocratic folly. It turned out that the Churchills' own staff now tell these tales as gleefully as anyone, if only to give the 250,000 or so tourists who troop through each year good value for the $14 price of admission. "To read the history books," the guide was saying as we entered a room lined to its 20-foot ceiling with old family portraits, "you would never want to meet such an avaricious couple. Anything and everything was for sale." He was talking about John and particularly Sarah Churchill, the first Duke and Duchess of Marlborough, who built Blenheim.

Maybe because Blenheim's history dwells so lovingly on two great men, John and Winston, it's striking how much the fortunes of the Churchills have actually depended on women. The family got its first big break in 1666 largely because John's sister Arabella was, as one historian put it, "the Duke of York's doxy." Their father was an impoverished Dorset gentleman; yet the family managed to secure a position in the royal court for the pale, gangling 16-year-old Arabella. She became mistress to the Duke of York, younger brother to King Charles II, and bore him several bastard children, by which time she had apparently used her sway to get John a place in the duke's retinue. There, in the



BRIDGEMAN ART LIBRARY, NY; BLEINHEIM PALACE

The Churchills themselves have at times denounced the palace as the "dump" and "that wild, unmercifull house."

splendidly debauched circumstances of that court, John eventually caught the wandering eye of the king's own mistress, Barbara Villiers.

According to the story historians generally credit, Villiers was entertaining Churchill one night in her bedroom (at the site that is now 10 Downing Street) when King Charles came to call. Churchill leaped out the window, for which Villiers later thanked him with a lavish gift of £5,000. People still debate whether, as one local put it, "he got the money for jumping into her bed or out of it." Villiers herself never said, except to complain that she gave it "for very little service done." In any case, John Churchill prudently invested the gift in a life annuity paying him £500 a year, and thus began the fortune on which the dynasty at Blenheim would be founded. Villiers also paid the standard bribes required to get Churchill, who was distantly related, valuable positions in the court and the army. A contemporary remarked that "a man who was the favourite of the King's mistress and brother to the Duke's favourite . . . could not fail to make his fortune."

But it was Sarah who really set the Churchills onto the paths of glory. In her portrait off the main hallway at Blenheim, she appears as a beautiful young woman with fine, golden hair, rosy cheeks, a lower lip like a velvet pillow, and hard blue eyes. "Her with the fury heart and fairy face," as one poet put it. Sarah was a member of the royal court but played her hand differently from Arabella and Barbara. She yielded nothing to John Churchill's

Originally built over marshland, the grand bridge at Blenheim was the source of constant friction between Sarah and architect Sir John Vanbrugh, who had an even more elaborate scheme in mind, which she quashed. The noted landscape architect Lancelot "Capability" Brown created the lake by damming a stream sometime after the bridge was completed.

The grand allegory on the ceiling of Blenheim's Great Hall, painted by Sir James Thornhill in 1716, shows John, the first Duke of Marlborough, kneeling in front of Britannia. Nearby, a winged figure displays a large plan from the Battle of Blenheim while Hercules and Mars look up worshipfully.

passionate entreaties until he broke down and asked her to marry.

John and Sarah were a thoroughly modern couple, always on the make. She kept her job as an attendant to the Duke of York's daughter Princess Anne and was proud to earn her own money. On the surface, the job consisted of little more than tending to royal whim, trading gossip and gambling at cards (Sarah often thriving at Anne's expense). But Sarah was beautiful and witty, and the hapless young Anne adored her. Whatever Sarah wanted, Princess Anne eagerly gave. As Anne's father, the Duke of York, became King James II, soon to be succeeded by William III and finally by Anne herself, what Sarah asked for and consistently got was advancement for her husband. The couple was ultimately earning £65,000 a year from their various titles and positions—roughly $11 million today.

Unlike many beneficiaries of royal favor, John Churchill went on to earn it. When a visitor walks through the courtyards of Blenheim Palace, it's easy to interpret the elaborate ornamentation as just so much baroque excess, or as the theatrical result of employing a former playwright, Sir John Vanbrugh, as the architect. But Blenheim was never meant to be merely a great house nor a grand theatrical set. It would be more accurate to think of it as the world's largest trophy case, celebrating John Churchill's many successful hunts on behalf of Queen Anne, and the head on the wall belongs to the French king Louis XIV.

"Look over the archway," my guide was saying as we stood in front of the palace. "Do you see the statue of a cockerel trying to rise with its wings spread? It's the emblem of France. But the British lion is holding it down and methodically tearing it to pieces." And the flaming finials on the palace towers? "Hand grenades," the guide said. The flames represent the Duke of Marlborough's coronet, atop a stone sphere symbolizing his power, both bearing down on the three leaves of a fleur-de-lis, the symbol of Louis XIV, "upside down in defeat." The guide did the math: "There are four finials on that tower, and there are four towers, so the image of the Duke of Marlborough defeating France is stated 16 times." Like many trophy cases, this one leaves little to the imagination.

But neither did John Churchill. As commander of the British forces during the War of the Spanish Succession, from 1702 to 1711, he defeated the army of Louis XIV not once but ten times. He was a brilliant leader, adept at negotiating treacherous politics on the home front, attentive to the care and feeding of 120,000 soldiers in the field and, above all, shrewd and surprising in battle.

One afternoon in one of the state rooms at Blenheim, I heard a tourist remark on the fine clothes Churchill seemed to be wearing in a tapestry he commissioned to commemorate one of his victories. "Did they really go into battle dressed like that?" she asked, and the guide answered, "They didn't do much fighting. The common herd did the fighting." Generals only fought, he said, "when they got caught." But this is unfair to Churchill, whose style of command kept him in the

Blenheim was never meant to be merely a great house . . . think of it as the world's largest trophy case.

thick of battle, occasionally even at the head of a cavalry charge. Once, when he was mounting his horse, a cannonball killed the man standing beside him. In another battle, one of his captains wrote that on the brink of a dubious attack, "The Duke of Marlborough (ever watchful ever right) rode up quite unattended and alone, and posted himself a little on the right . . . whence he had a fair view of the greater part of the enemy's works. It is quite impossible for me to express the joy which the sight of this man gave me at this very critical moment."

In the beginning of the war, all England felt the same way, particularly after a great victory at Blenheim on the Danube River in 1704—the first time the British had defeated the French in more than 50 years. Queen Anne (no doubt encouraged by Sarah) chose to honor her triumphant general by giving him her royal park at Woodstock. Parliament agreed to build him a great house there, to be called Blenheim. But the construction was to prove an almost endless fiasco. The Churchills committed every sin of every nouveau riche who ever built a McMansion. They quarreled with the architect, cheated the workmen, placed grandeur above comfort and wildly overspent. Like so many homes of the nouveaux riches, Blenheim also entailed a teardown—indeed, one of the egregious teardowns in history.

One morning at six, I walked out to Blenheim. It was cold. The young leaves of a chestnut drooped down, soft and tender as the wings of newly emerged damselflies. Doves hooted softly in the branches, and wood pigeons took off with a sudden pulsing of wings. The palace was just a vague mass in the fog as I passed under its walls and headed down across the great bridge to the far side of the lake. Here, a royal lodge once stood, and English kings back to Ethelred the Unready came to hunt and misbehave. It was "One of the Most Agreeable Objects that the best of Landskip Painters could invent," according to the architect John Vanbrugh. But Sarah Churchill wanted it down.

Throughout the construction, she and Vanbrugh waged a second battle of Blenheim. He had his workmen make a show of demolishing parts of the buildings around the royal lodge when Sarah came to visit. Then he rebuilt them when she went away again. In the 11th year of construction, she complained that Blenheim was still "a chaos which only God Almighty could finish." Sarah ultimately fired Vanbrugh, had the royal lodge torn down on her own and used the rubble for fill.

The political climate of that day was astonishingly venomous, and as the war dragged on, the Churchills often got the worst of it. Not content to ridicule John for his well-known love of money, for instance, one critic falsely accused him of sending his officers to certain death so he could profit from selling their commissions. Even in that harsh context, Sarah's own rhetoric stood out for sheer rancor. She quarreled with almost everyone. She also became increasingly heavy-handed in her efforts to force the Churchills' own political inclinations on Queen Anne. When the queen balked, and ultimately came to depend on another of her attendants, Sarah circulated the rumor that her rival was "a slut" and a "dirty chambermaid," who had won the queen's heart through the "Conduct and the Care of some Dark Deeds at Night."

After John died, Sarah commissioned the marble monument that rises above his tomb in Blenheim Chapel. The duke is depicted as a Roman military hero rising up to the heavens. Sarah, top, right, gazes at him while the figure of History, lower left, records the duke's achievements, and Fame, at right, trumpets his glory. A dragon representing Envy and Spite lies crushed beneath it all.

Not surprisingly, the Churchills fell out of favor. In 1710 their political adversaries came to power. Funding for Blenheim Palace was soon cut off, and the unpaid workers were left to starve. The Churchills eventually went into exile, to return only when George I succeeded Queen Anne in 1714. They did not actually move into Blenheim Palace, which they completed partly with their own funds, until 1719, and John only lived to spend part of two summers there. By then, he was a stroke-addled old man.

After John's death (a clockface on one of the towers marks the exact moment), Sarah seldom came back. But she lived another 22 years and continued to furnish Blenheim with further monuments to John's glory, including a huge marble statue that still dominates the family chapel. It depicts him as a Roman military hero, rising to the heavens, with Sarah gazing up at him worshipfully, his young sons disporting themselves below, while the figure of History records his achievements with a quill pen, and Fame trumpets his glory down through the ages, their combined weight crushing a dragon of Envy and Spite. The Churchill family pews face this statue at point-blank range. A visiting artist once remarked that the chapel provides little incentive for them to divert their attention to thoughts of God. "No," the ninth duke supposedly replied, "the Marlboroughs are worshiped here." I found myself feeling almost sorry for them.

One afternoon I heard a member of the palace staff ask a colleague, "Are the privates open today?" using that oddly off-color jargon for the Churchill family's private apartments, which visitors can tour for an additional fee. They were. "Because this is a private residence," the guide began, as we stood in a long, vaulted hallway, "there are lots of personal knickknacks around. Love them if you like. Hate them if you like. But no fingerprints." Under glass, a guest book lay open to June 27/28, 1936, when the country house weekend was still a fixture of aristocratic life. The left page was given over to a single signature, Edward R.I. (*Rex Imperator*), and the right to a dozen or so other guests, among them Wallis Simpson and her husband Ernest, along with Winston and Clementine Churchill. Serious company.

The privates were of course also serious living space. But like the rest of the palace, they felt oddly impersonal. The books in the sitting room were the usual coffee-table fare, *Edwardian Portraits*, *The Fauves*, *Impressionism*, each exactly where it lay when I'd visited a year or two before. On her bed, the duchess had some pillows decorated by a daughter. Also precisely as before. It seemed as if the owners themselves had to be careful not to leave fingerprints on the objects in their own display case.

I met the 11th Duke of Marlborough, whose staff refers to him as "His Grace," on a subsequent visit. He was a tall, thin fellow in his 70s, genial, with slightly protuberant blue eyes and wavy gray hair combed neatly back, dressed in a hand-sewn double-breasted suit with the gold chain of a cigar-cutter looped through the buttonhole on his lapel. I asked him what it had been like to grow up at Blenheim, back in the 1930s. He recollected riding around the basement (or undercroft) on his bicycle. He also recalled that his father, the 10th duke, used to drive around in the garden in an old sports car, an Austin Six perhaps, while the kids chased him on their bikes and tried to pelt him with tennis balls. I think this may be the single most appealing thing I have ever heard about any of the Marlboroughs in their entire 300-year history. The duke also admitted that he had not actually visited all of the 187 rooms in the palace, merely "the majority of them."

It did not particularly bother him that John and Sarah Churchill still had their fingerprints everywhere on both the private and public Blenheim. They were too distant in time to matter much. But he beamed with pride at the memory of the only two people in 300 years who had been strong enough to step out of John and

Opposite: Blenheim's ornate library occupies a single gallery 165 feet long. Although it displays numerous paintings and sculptures, probably the most striking feature is the Willis organ visible here at the far end of the hall. Above: In one of the triumphant stone carvings that adorn the archways of the palace, the mighty British lion subdues a hapless French cockerel.

The Ninth Duke of Marlborough and his Duchess (top), Consuelo Vanderbilt, posed with their sons for John Singer Sargent in 1904. Although he grew up at Blenheim in the 1930s, the present occupant of the Churchill family's private apartments at Blenheim, the 11th Duke of Marlborough (above), has still not visited all 187 rooms.

Sarah's shadow. Both were in some sense outsiders. Consuelo Vanderbilt was an 18-year-old American in 1896 when her ambitious mother forced her to marry the ninth Duke of Marlborough for his title. Winston Churchill, though born into the family, was the son of a younger son, and thus a sort of discard, heir apparent only until Consuelo could give the ninth duke a son of his own.

Consuelo was a "dollar duchess," the most prominent of the many rich American brides imported to rescue the fading aristocracy. She brought the family a dowry of $2.5 million in railroad stock, which provided the basis for restoring Blenheim to its former glory. By then, the Churchills had long since begun charging visitors an admission fee to help pay for maintenance and repairs.

Soon after their marriage, Consuelo's husband informed her that her role was to be "a link in the chain." His grandmother admonished her to produce a male heir promptly, "because it would be intolerable to have that little upstart Winston become duke." Consuelo in fact produced two sons, "an heir and a spare," as she put it. Winston apparently did not mind. His own mother, Jennie, was not a rich American, but even so he found in Consuelo an able conversationalist and a lifelong friend. She was in truth far better educated than her highborn husband and, despite her own vast wealth, more down-to-earth. On being confronted with the first duke's ubiquitous effigies, the words that came to her mind were "pompous vanity."

One of the treasures of the palace was a 100-pound silver centerpiece depicting the first duke on horseback, bending down to write a dispatch informing Sarah of his victory at Blenheim. Consuelo used this centerpiece as a *cache-mari*, or "hide-the-husband," positioning it so she would not have to watch her own lugubrious duke fiddle with his dinner. And when she decorated their house in London, Consuelo placed an image of John Churchill at one end of the hall, and at the other, her own ancestor, Commodore Vanderbilt, so the two of them could glower at each other like rival pirates. The marriage ended in divorce. But Consuelo's son and grandson, the 10th and 11th dukes, have kept her portraits hanging everywhere in the palace, tall, swanlike and looking every inch as if she still owns the place.

Unlike Consuelo, Winston revered the great duke. As a young man, he wrote a four-volume biography intended to restore Churchill to his rightful place, with Wellington and Nelson, among England's greatest heroes. But Winston also managed to make Blenheim a shrine to himself. With the Churchill family's preternatural knack for tending the fires of its own glory, he arranged to get himself born at Blenheim—not in some awkward bedroom upstairs but in a suite just off the main entry that could conveniently become a national monument.

It would be hard to exaggerate the influence of Blenheim, with all its pomp and privilege, on Winston's life. He was baptized in the Blenheim Chapel, cherished his childhood visits and used the palace as bait to lure his future wife, Clementine. ("I think you will be amused by Blenheim," he wrote, badly stretching the limits of upper-class understatement.) He proposed marriage when he and Clementine were seated on a bench in a temple on the palace grounds, and they passed their honeymoon at Blenheim. At the same time, Winston never suffered the crushing burden of Blenheim. He drew inspiration from it without ever paying the price of upkeep.

Winston spent two formative years immersed in the first duke's papers

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With the Battle of Britain about to begin, Winston Churchill came to Blenheim "to draw strength from its stones."

in the Blenheim archives, and he often wrote to Clementine in the same words with which John had addressed Sarah: "My dearest soul." In September 1940, with the Battle of Britain about to begin, Churchill came to Blenheim, in the words of one historian, "to draw strength and inspiration from its stones.... He spent the afternoon crawling about the Long Library floor, marshalling his fifteen hundred toy soldiers into the winning formations of the battle of Blenheim, while his cigar smoke curled upwards, and armour-clad John Churchill looked on approvingly from his marble plinth."

The palace staff had warned me that the Winston Churchill exhibition off the main hallway at Blenheim was dated and in need of renovation. But I found it powerful. Not for the photographs or the other memorabilia. What moved me was simply the voice playing over and over in the background, weary and implacable, guiding his fellow citizens through the darkest hours of World War II: "We shall defend our island whatever the cost may be, we shall fight on the beaches, we shall fight on the landing grounds, we shall fight in the fields and in the streets, we shall fight in the hills; we shall never surrender."

The slow, deliberate cadences on the tinny newsreel soundtrack seemed to resonate with the unshakable power of Blenheim and with the achievements of John Churchill, who also once liberated Europe: "You ask what is our aim? I can answer in one word: Victory! Victory at all costs, victory in spite of all terror, victory however long and hard the road may be; for without victory there is no survival." I left the palace by way of the massive front door, with Winston Churchill's speeches still resounding in my mind. Churchill himself would have been too discreet to say it out loud, but it seemed to me that Blenheim had, in the end, served some worthy purpose, and he was the living proof of it.

Richard Conniff, whose writing for SMITHSONIAN *has won a National Magazine Award, is at work on a book for W. W. Norton about wealth and human behavior. Michael Freeman has photographed 30* SMITHSONIAN *stories over the past 20 years.*

Care to rub shoulders with English aristocracy?

UNLESS YOUR NAME appears in *Burke's Peerage & Baronetage*, then one of your best chances to sample the decadent splendor of royalty is to spend an afternoon at Blenheim Palace and its gardens, not far from the university town of Oxford.

BUT BE FOREWARNED; the world of the manor born isn't all scones and clotted cream, as Richard Conniff reveals in this story. Our favorite anecdote: during a weekend at the palace, Lady Nancy Astor turned to Winston Churchill and said, "If I were your wife I would put poison in your coffee." Winston replied, "And if I were your husband I would drink it." Part of the fun of visiting Britain's great houses is learning details of their colorful history: Blenheim ranks high on the chart for its occupants' eccentricity, intrigue and often downright illicit behavior. Check out Hugh Montgomery-Massingberd's entertaining book, *Blenheim Revisited*, for a host of stories that will make a visit more enjoyable.

A TOURIST to the palace can tell immediately whether the current occupant, the 11th Duke of Marlborough, is in residence by the flag flying over the massive East Gate. Nine pounds, 50 pence (about $14) gains an adult a palace tour, which takes at least an hour. A tour of the "privates," or the personal chambers, must be arranged afterward, as access depends on whether the duke is there, and admission is £4 (about $6). Admission to the gardens and the Butterfly House, and a ride on the narrow gauge train, are included in the general admission. Attempting the Marlborough maze and hiring a rowboat on the lake cost extra. (Blenheim Palace and Gardens, Woodstock Oxfordshire, OX20 1PX, Tel: 441 993 811091, open daily 10:30 A.M. to 5:30 P.M., from mid-March through October; www.blenheimpalace.com).

IF DRIVING on the opposite side of the road doesn't bother you, you can rent a "mini" from Heathrow Airport and reach Blenheim in about an hour on the M40. The nearby town of Oxford, home of the multispired and storied university, is filled with bed-and-breakfasts. The more adventurous can rent a bicycle in Oxford and cycle a pleasant eight miles on the A44 to the palace.

THE DOWNSIDE of a visit to Blenheim is that your house will feel small when you get back. Take solace, however: think about having to mow that lawn and clean all those bathrooms.

FOR TRAVEL TIPS, stories and photographs of Blenheim Palace, and traveling in England, click on **smithsonianmag.com/journeys/.** Here you can:

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Fruit 'n' veg animals include a Brussels sprout pig and (clockwise) a red pepper hummingbird with celery leaf wings; pineapple turtle; radish mouse; okra grasshopper on string-bean stems; pepper angelfish; cherry ant; and yam mole.

the

se Eat

PEA POD CATERPILLARS, BOK choy buffalo, pear bears, melon tortoises, banana octopuses. They're all part of an exotic menagerie that may change forever the way you look at produce. These whimsical sculptures fashioned wholly from fruits and vegetables are the handiwork of Saxton Freymann, a New York artist.

Freymann, now dubbed the Calder of Cabbages and the Rodin of Rutabagas, had embarked on a "quiet career" as a painter until 1997 when he answered publisher Joost Elffers' call for someone who could carve food beyond the rose-radish table garnish. Freymann tried a few animals and "discovered I was good at cutting food."

Using an X-acto knife, he deftly transforms garden-variety produce into emotive faces and amusing animals that he enhances with peppercorn or black-eyed pea eyes, beet-juice mouths, or corn-kernel teeth. He keeps his designs simple. "The colors and forms are so wonderful that they give you everything you need. The characters come out of the vegetable or fruit. I'm just nudging it to something it resembles."

Freymann works improvisationally: his sculptures are usually determined by serendipitous finds in the produce aisle. "I shop on the way to the photographer's studio," he says.

His fragile creations are pictured in several books. *Play With Your Food* is a romp through a garden of cute critters. *How Are You Peeling?* illustrates emotions. Freymann is working on *Gus and Button*, due in September from Scholastic Press. The story requires some complicated composites of produce. "I'm always finding another role for a vegetable," Freymann says. "And my family is very healthy because we eat the cast." —*Marian Smith Holmes*

Art

For this elaborate mushroom tableau in Saxton Freymann's upcoming book, *Gus and Button*, the artist designed a composite on his computer.

In *One Lonely Sea Horse*, a school of appealing banana octopuses befriends a little beet sea horse in an underwater setting made of mushrooms.

NIMKIN/PARRINELLO; PP. 116-117 JOHN FORTUNATO; ALL: © JOOST ELFFERS AND SAXTON FREYMANN

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A gallery of faces, most of them from Freymann's award-winning children's book, *How Are You Peeling? Foods With Moods*, evokes a wide range of emotions and expressions. Creating vegetable and fruit faces and sculptures is "always exciting," Freymann says. "It's a process of discovery—a way of looking at things and finding something new in them." Top row, left to right: A grinning green pepper, a bored kiwi and a distraught apple. Middle row: A frustrated orange and a curious artichoke wolf. Bottom row: A defiant "Mussolini" tomato, a jolly mushroom and a content chayote frog.

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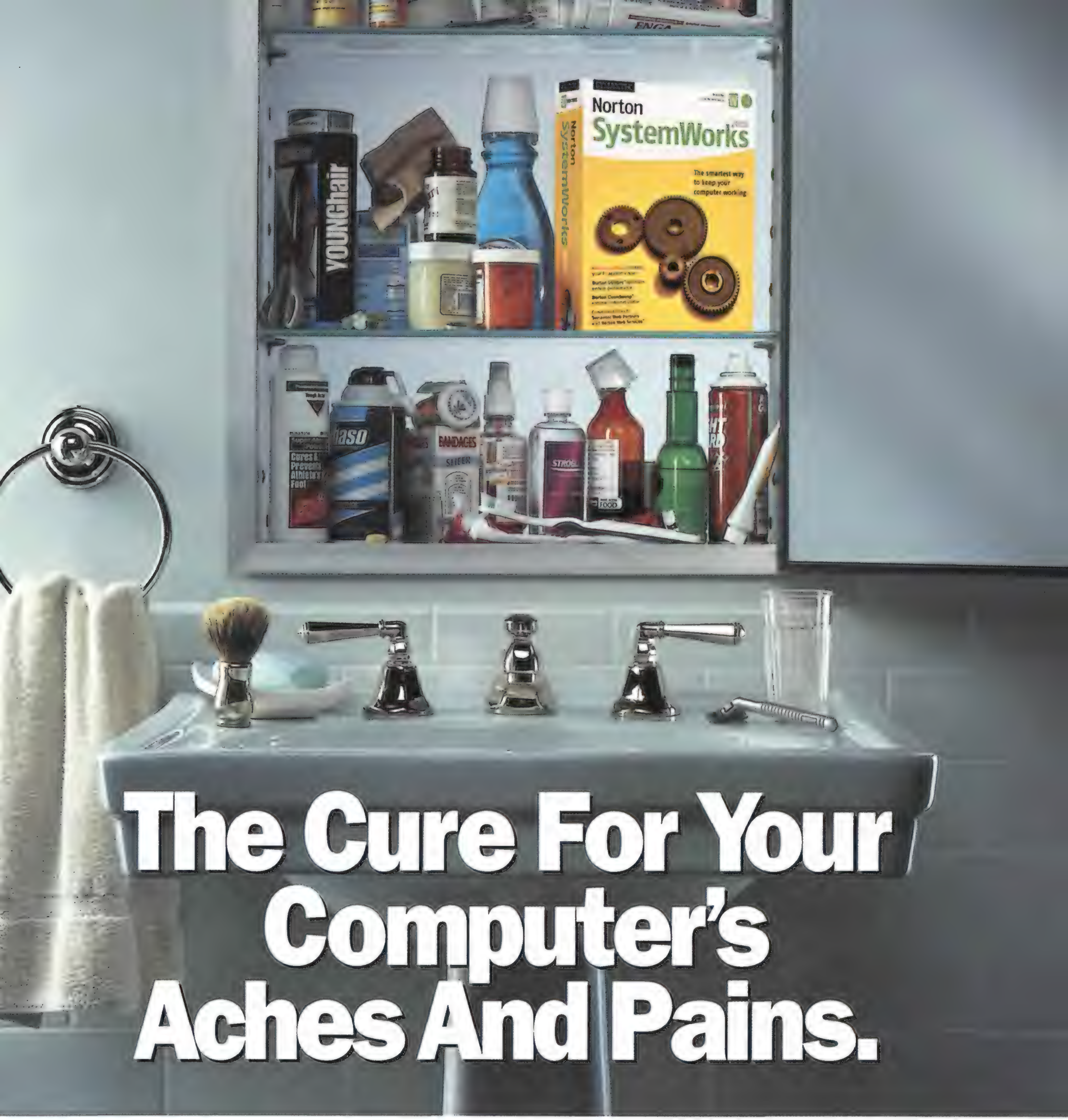

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With Clive in India

HE CONQUERED BENGAL, DROVE THE FRENCH FROM INDIA AND BUILT A CIVIL SERVICE. BUT WAS HE A SAVIOR OR PLUNDERER?

◆ BY MICHAEL OLMERT

I. Van Ryne delin.
Publish'd according to
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Published 5th May 1780 by LAURIE

"BY GOD, MR. CHAIRMAN, AT THIS MOMENT I stand astonished at my own moderation."

The year is 1773. The place, the House of Commons, London. The speaker is Robert, Lord Clive of India (1725-1774), that often brave and sometimes honorable warrior known as England's "heaven-born general." At the peak of his military fame, 1757, Clive had been the stunning—though vastly outmanned—victor at the Battle of Plassey, which drove the French out of Bengal and placed the jewel of India atop the British crown.

But here Clive was making his famous "astonished" speech near the end of his career, during his impeachment debate, a bitter parliamentary inquiry into his financial affairs. Trouble was, in doing so much for king and country, Clive had also made himself the richest subject of any nation on earth. Suddenly, this son of a minor Shropshire squire had it all—estates, land, houses, jewels, gold, art, shares, and cash, buckets of it. He was plainly too rich, and envious tongues were wagging.

Standing before Parliament, Clive was defiant: "A great prince was dependent upon my pleasure, an opulent city lay at my mercy; its richest bankers bid against each other for my smiles; I walked through vaults thrown open to me alone, piled on either hand with gold and jewels." So it wasn't that he had not been given a great deal of money in India, he urged; the wonder was that he had not come home with more. Only a confident and proud man would throw such contempt into the teeth of powerful enemies.

English shipping throngs the harbor of Bombay, India, in this c. 1750 engraving.

In a huge canvas by Benjamin West, Clive received the *diwani*, the right to collect revenues from the Mughal emperor of India.

JOHN HAMMOND/NATIONAL TRUST PHOTOGRAPHIC LIBRARY; PP. 122, 123 MARY EVANS PICTURE LIBRARY

In the end, Parliament resolved that "Robert, Lord Clive did, at the same time, render great and meritorious services to his country." He was vindicated, though the stress of it all had broken his heart. Eighteen months later, Clive was dead.

In the intervening 226 years, few have questioned Clive's bravery, power or pluck. But the question remains: Was Clive British India's savior or plunderer, its founder or a mere profiteer?

Robert Clive was born on September 29, 1725, near the village of Moreton Say in Shropshire, not far from the Welsh border. The little church he was baptized in, St. Margaret's of Antioch, still stands.

Clive's father, Richard, was a minor landholder, with rents that gave him a modest annual income of some £500, not enough to support his family to a level that would garner much respect in either the village or the nearby town, Market Drayton. The family always had "trouble with money," an embarrassment Clive would struggle to overcome.

Clive even as a child exhibited the restiveness and aggressiveness that would be with him forever.

Sent away by a troubled mother to live with an aunt, Clive even as a child exhibited the restiveness and aggressiveness that would be with him forever. "He has just had," wrote his uncle Daniel Bayley on June 9, 1732, "a fine suit of new Cloths, and promises by his Reformation to deserve Them. I am satisfied that his fighting (to which he is out of Measure addicted) gives his Temper a Fierceness and Imperiousness, that he flies out upon every trifling Occasion; for This reason I do what I can to suppress the Hero, that I may help forward the more valuable Qualities of Me[rcy] Benevolence and Patience." At that moment, the little hero was 6 years old.

By age 11, Clive was back in Shropshire, attending grammar school in Market Drayton. For the next six years, his reputation for recklessness and defiance grew.

In 1737 Clive's father sent him to the prestigious Merchant Taylor's School, London, where he continued to struggle against authority. A final prep at a cramming school at least taught him passable penmanship and some accounting, which qualified him for a post as a "writer," the mindless clerical drudgery of copying accounts and records.

In time, his father decreed that young Clive would join the British East India Company and be shipped out to Madras (now Chennai), one of the company's Indian outposts. This must have been a blow. As the eldest son, he should have stayed in Shropshire to help with the estate. India was for second sons. And it was dangerous. He would either come home rich or not at all.

To Clive, it must have seemed life was always about money. His father was consigning him to a bland job, in a sweltering subcontinental office, plainly expecting Clive to float home on the tide of easy money flowing from the East.

Not that Richard Clive was wrong. Of all England's colonies, India was the one where vast fortunes were being made. People went out there as writers and quickly moved up the ladder because of one spectacular benefit of employment. Although the company paid low wages, employees were allowed—in fact, were expected—to take up trading on the side. They hired cargo space on ships and at their own risk traded goods: textiles, artifacts, spices and even opium. Everyone did it; not to do it showed a want of business acumen.

But British society was fed up with newly rich merchants just back from India, tastelessly throwing their money around, driving up prices. It even coined a term of contempt for them, "nabobs," from "nawab," the European spelling of the Urdu word for governor.

On June 1, 1744, Clive arrived in Madras. He was 18. The Company pecking order was rigid: civil servants were to be "writers" for five years, "factors" for three more years, "junior merchants" for two years, and only then did they rise to the exalted state of "senior merchant." He was forced to live in a dormitory with the other writers, a situation he had never liked. He had trouble fitting in. He seldom followed rules and scorned

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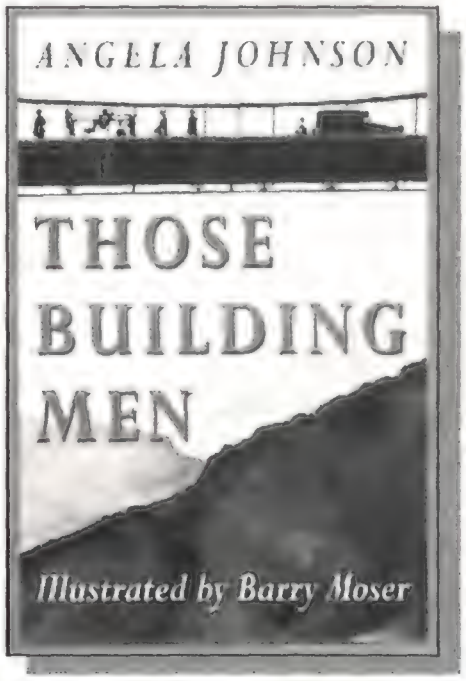

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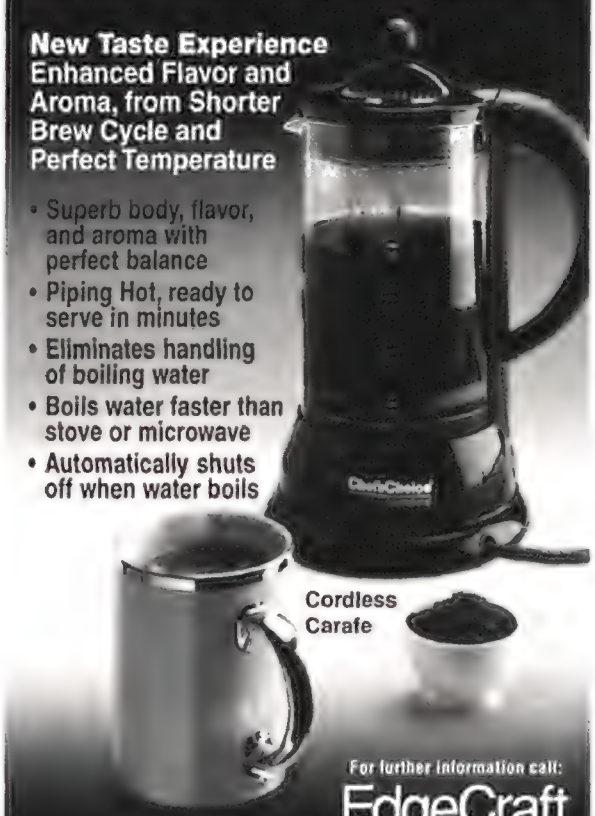

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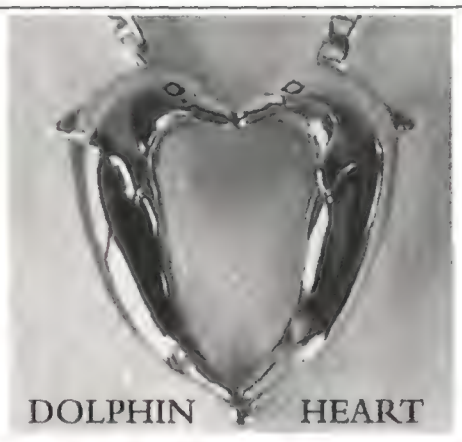

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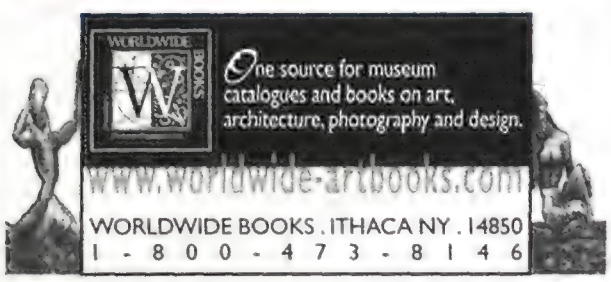
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This portrait of Clive at the height of his power and wealth, by Nathaniel Dance, hangs in Wales' Powis Castle, long the home of Clive heirs.

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the social and commercial hierarchy; he found it a lonely life.

His melancholy led to a suicide attempt, but the pistol failed to fire. Recovering, Clive took to the local culture, admiring what he regarded as its unlaced, un-English openness. In contrast to his fellows, who wanted to make a little England there, he reveled in India's exotic difference.

Antisocial as usual, Clive defiantly accused a fellow Englishman of cheating at cards and was challenged to a duel. After Clive shot and missed, his opponent calmly walked up to Clive, as was his right, pointed the gun at his head and demanded that Clive retract his accusation. Clive's response: "Fire and be damned. I said you cheated and I say so still, and I will never pay you." Astonished, the man threw down his pistol, certain that Clive was mad.

Such bravery—and luck—could be useful. War between Britain and France broke out in 1744, and the fighting quickly spread to India, where the French also maintained a significant trading interest, at the time as large as the British East India Company's. It's hard to overestimate the economic and strategic value that Europeans attached to India. As early as the 17th century, Portugal, France, Holland and England had all established trading centers, called factories, along the Indian coastline—Britain's foremost factories, for example, were at the port cities of Bombay (now Mumbai), Calcutta and Madras. As a

condition of the grant of monopoly for trading, the Company maintained its own army in India, so as not to place economic demands on the crown. (Britain's early efforts at colonization mostly began as business ventures, not government ones.)

Both French and English army units typically had a handful of Europeans as officers, artillery tacticians and strategists, but the lion's share of the fighting—and dying—was done by locally recruited Indians, both Hindu and Muslim, called "sepoys."

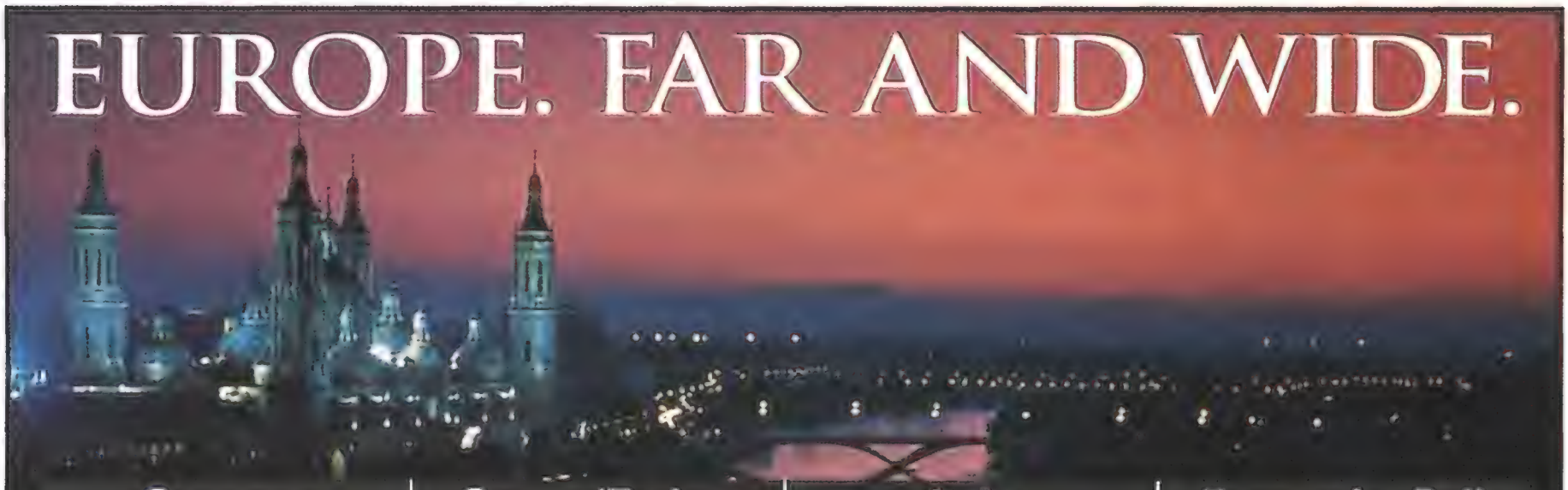
In 1746 Madras was captured by a French force under Admiral Labourdonnais. The English prisoners, including Clive, were given the freedom of the city, on condition that they promised, on their honor, not to attempt escape. The French commander in the region, however, suddenly removed the English governor of Madras and a number of his officials to parade them in chains before the populace of the French factory at Pondicherry. Clive took this violation as a release from his undertaking with Labourdonnais. Disguised in native costume, and accompanied by his one friend in Madras, Edmund Maskelyne, he sneaked away to rejoin the English at Fort St. David, just south of Pondicherry, a hundred miles away.

It was a feat of derring-do and was instructive about Clive's long-term career. He would forever be a risk-taker, and lucky. His career constantly reminds us of Napoleon's insistent question about prospective field officers: But is he lucky? It was plain that Clive was made for war. When the French again threatened, he volunteered for the Company army.

The Company was quick to recognize Clive's value. On May 2, 1747, the council at Fort St. David wrote to their directors in London: "Mr. Robert Clive, Writer in the Service, being of a Martial Disposition, and having acted as a Volunteer in our late Engagements, We have granted him an Ensign's Commission." The temper which had so worried Clive's uncle had at last found employment.

Clive's first major engagement began on August 31, 1751, at Arcot, 50 miles southwest of Madras, where then-Captain Clive's force of 200 English, only 8 of them officers (and 6 of those having never seen action), 300 sepoys, and three cannon, displaced a force of 1,100 by surprising them during a violent monsoon thunderstorm. The enemy thought Clive a man possessed and ran away.

Once he had taken the Arcot fort, Clive then withstood a 50-day siege from a French-trained army of 10,000.



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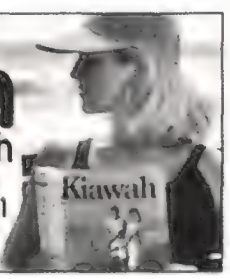

Again and again, in sallies out of the fort to hector the enemy about the town, Clive exposed himself to the hottest fire, but emerged unscathed and always carried the day.

On November 24, 1751, the final assault on Arcot was repulsed, and by the next morning the besiegers had drifted away. Clive's victory made Britain and the East India Company major players in the region.

By 1753, Clive was worn out from war and worn down by the climate and ill health, probably caused by malaria and any number of stomach ailments. But he did have time for the grand passion of his life, marrying Margaret Maskelyne, sister of his friend Edmund, with whom he had escaped from Madras. On February 18, 1753, their marriage vows were pledged at St. Mary's Church, Madras; on March 10 the pair sailed for England.

Clive's Indian service had made him financially secure as well as famous. For two years, Clive and Margaret enjoyed Britain's green and pleasant land, being feted by the Company directors, losing a costly election for Parliament, helping his father sort out the family finances, shopping for homes and baubles, and in general living well on their now considerable means. A grateful Company gave Clive a diamond-encrusted sword, worth 500 guineas, "for his singular services."

In April 1755 Clive again sailed for India. After a number of minor military adventures in Bombay and on the west coast, on June 1, 1756, the 30-year-old newly minted Lieutenant Colonel Clive was given the command of Fort St. David. Nine hundred miles to the north, in Bengal, trouble was brewing.

Again and again, Clive exposed himself to the hottest fire, but emerged unscathed and always carried the day.

Encouraged by the French, the upstart Nawab of Bengal, a young man called Siraj-ud-Daula, had overrun the normally quiet British outpost at Calcutta. Worse, in the confusion of battle, Siraj's troops herded 146 British officers and civilians (including one woman) into a small crypt, 18 by 18 feet, under the ramparts of the city's Fort William. Siraj's troops then forgot all about them, leaving them with no water in the tropical heat. The next morning, June 21, 1756, only 23 were alive.

The tragedy became infamous as the "Black Hole of Calcutta." But its details are controversial. Some say there were as few as 43 victims. Whether Siraj was aware of the imprisonment is also doubtful. Most troublesome, much of our information comes from a sensational eyewitness narrative by a British survivor, not exactly an unbiased account. In any case, as with Custer at Little Bighorn a century later, the public and the East India Company demanded a stern response. Clive was that response.

Organizing a force of 800 Europeans, three companies of regular army troops and 1,000 sepoys, and sailing on Royal Navy ships of the line under Adm. Charles Watson, Clive left Fort St. David on October 16, heading for the Hugli River and Calcutta. On January 2, 1757, Fort William was bombarded by Watson's squadron while Clive approached along the riverbank. Wisely, the defenders had little stomach for battle and deserted the city. Although Calcutta was retaken, the Indian army under Siraj-ud-Daula was still menacingly at large.

Moving upriver, Clive next took the town of Hugli and then, recognizing that French interference was

Armored war elephants of 18th-century Indian armies seemed formidable, but the beasts could become unmanageable if wounded.

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the greatest impediment to peace in Bengal, the French factory of Chandernagore (on March 23). Before long, Siraj was again conspiring with the remaining French. Threatening Calcutta, he brought his troops, 55,000 strong, to a bend in the river near a tiny hamlet called Plassey. There he stopped to consider his options.

Luckily (that word again) for Clive, the young Siraj-ud-Daula was an indecisive soldier and unpopular nawab, cruel, craven and addicted to violence. His uncle, Mir Jafar, was known to be unhappy with his nephew's rule. Was it possible Mir Jafar could be induced to separate himself and his powerful troops from the main body of Siraj-ud-Daula's forces? In return, his nephew could be overthrown and he himself installed as nawab. To help bring this about, the influential Omichand, a merchant and the richest man in Calcutta, offered himself as a middleman, whose main interest was in peace and profits. He would float the suggestion before Mir Jafar on behalf of the British, but demanded a whopping £300,000 as his price for not revealing the conspiracy to Siraj-ud-Daula.

Here Clive did something that has provoked controversy ever since. With no intention of paying Omichand, he drafted two treaties. The official treaty with Mir Jafar, on white paper, made no mention of the payoff; it was signed by Clive and Admiral Watson. Only the treaty on red paper, the fake treaty, mentioned the payoff, and this was shown to Omichand. Admiral Watson was so outraged by this breach of honor that he refused to sign this copy. So Clive just forged his name. When the bait and switch worked, plans went ahead for a showdown at Plassey. It was June 23, 1757.

Clive's 3,200 men faced a combined

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[1] Peschel RE, Chen Z, Roberts K, Nath R. Long-term complications with Prostate Implants: Iodine 125 vs. Palladium-103. *Radiat Oncol Invest* 1999; 7 278-288

[2] Blasko JC, Grimm PD, Sylvester JE, et al. Palladium-103 brachytherapy for prostate cancer carcinoma. *Int J Radiat Oncol Biol Phys* 2000; 46 839-850

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Indian and French army of 40,000 troops, 15,000 cavalry with armored elephants, and 50 artillery pieces. Long odds. Not only that, it's hard to imagine going to war against Indians using mainly Indian troops. But Clive loved and trusted his sepoys, and they knew that their leader was lucky. From the beginning of the day, Clive was almost completely surrounded by the nawab's forces. Fortunately, the area near the river's edge, where Clive landed at dawn, offered several defensive advantages. A dense mango grove, banked about with earth, gave his troops cover during the heavy cannonade that started at 8 A.M.; the banks allowed them to return cannon fire without being seen, and they knocked out a number of enemy guns. Next to the grove was a hunting lodge, Clive's headquarters, which gave him a view of the entire battlefield. Some brick kilns near it sheltered Clive's advanced artillery, which began pounding the French guns on his left.

No signal had been received from Mir Jafar, despite the fact that he'd indicated he would tip his hand by now. Was he still coming over to the British side? At the moment, Mir Jafar's forces could threaten Clive's entire right flank. His troops, however, held back from joining the attack.

Even without Mir Jafar, Siraj's army seemed to get the upper hand. Clive was pinned down, most of his men cowering in the mango orchard, with little chance of escape. At noon, however, a break came in the form of a downpour, which must have dampened the nawab's powder, for his rate of fire dropped off sharply. The rain seemed to have little effect on Clive's guns. His sharpshooters also began to scatter the enemy advances and harry their gun emplacements. Clive later wrote that his men killed three armored elephants.

After a blast of grapeshot killed Siraj's most trusted general, Mir

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Madan, the nawab mounted a dromedary and abruptly left the field with 2,000 of his elite guards, heading for his palace at Murshidabad, 300 miles to the north. Later, he would be executed there by Mir Jafar's son.

By 5 P.M., the Battle of Plassey was over. Clive's troops had overrun the French gun emplacements and the Bengali trenches and redoubt. The rest of the Indian army was in full flight. Clive reported his losses as 22 killed and 50 wounded; Siraj had lost 500 men.

Mir Jafar was installed as the new nawab, Clive apparently forgiving him for not joining him at Plassey, but nonetheless grateful for his having stayed out of the fray. That was all the edge Clive had needed. Omichand, crushed on learning he would receive nothing for his silence, seems to have become slightly unhinged; he died the next year. Later, when the backlash against Clive came, a cartoon printed in London showed Clive pleading with the ghost of Omichand for forgiveness. But would Clive really have been haunted by this treachery, which one early historian called merely "a pious and necessary fraud"?

For Clive's valiant participation in the battle, Mir Jafar granted him a personal reward of some £250,000, the equivalent of several million dollars in today's money. For help in putting down local insurrections, Mir Jafar gave Clive a further and most controversial gift, the *jaghir*, an annuity of £30,000 per year, nominally the rent on territory leased to the East India Company. In effect, this was Company money going into Clive's pocket. Moreover, he was using Company resources to help defend and consolidate Mir Jafar's rule. Still, as he pointed out at his impeachment: "A great prince was dependent upon my pleasure . . . an opulent city['s]. . . vaults open to me alone."

In Britain in July 1760, Clive was lionized. Hailed by king and Company, he was made Baron Clive of Plassey and elected a member of Parliament representing Shrewsbury. In London, he lived in an elegant town house at that most fashionable of addresses, Berkeley Square.

He also purchased one of the finest country houses in the land, Claremont, in Surrey, designed by Sir John Vanbrugh. Clive had the Vanbrugh house pulled down and a new one erected by the great architect of his day, "Capability" Brown. On its pediment is the Clive coat of arms, supported by an Indian war elephant, its

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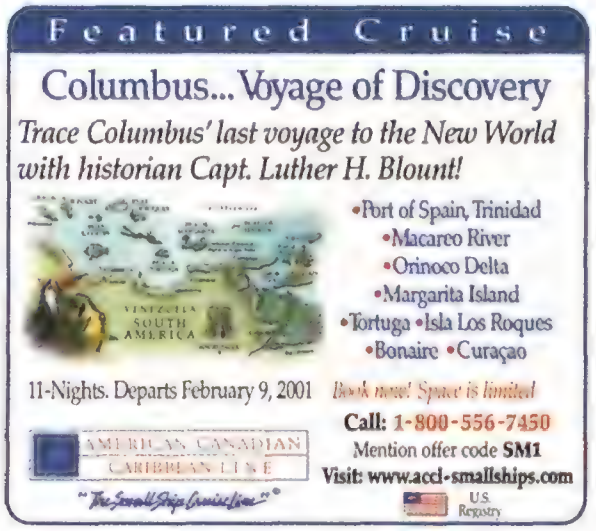

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tusks destroyed by time. In the basement is a great marble bath, built to comfort Clive's worn-out body.

Clive's time in the tropics, the diseases he contracted there and the constant stress of warfare had begun to take their toll. Though he lived a grand life, he had become addicted to laudanum, a tincture of opium that he took to relieve his wracking stomach pain. He was so sick he refused to be seen in public for a year.

In the end, what saved Clive and his reputation was that he created in Bengal a Pax Britannica.

In May 1765, his health rebounding somewhat after almost five years at home, Clive returned to Calcutta for the last time. During his time in England, the Company in India had declined into a cesspool of profit-taking and graft. In Clive's view, his task was "cleansing the Augean stable." How ironic: the abuses he was expected to correct were the very ones he'd profited from.

The problem stemmed from unbridled, conflict-of-interest trading by both civil servants and the military, and from flattering gifts from the nawabs, not unlike Clive's jaghir. After curbing the worst of the abuses, Clive was forced to settle a mutiny in the army, urged on by men who had grown used to the easy extensions to their salaries. Naturally, his loyal sepoys helped Clive put down the rebellion, for which they were rewarded with double pay. Still, Clive's hands were hardly clean. He had become spectacularly rich, and now he was closing the door to his followers.

The cashiered army officers and others sent home in disgrace formed a nucleus of enemies who managed to hound Clive even beyond the grave. His first biography, published the year after his death, was said to be written by a minor journalist called "Charles Caraccioli, Gent." The book is now thought to have been dictated to Caraccioli by a cabal of Clive's old enemies. One critic said the book had "all the appearance of being the joint composition of a discarded valet and a bookseller's hack."

Clive's most important accomplishment in India stems from this last visit. From the Mughal emperor at Delhi, Clive received the *diwani*, the right to collect revenues from all the emperor's territories in return for British military protection. In effect, the emperor was put on the British payroll. The economic conquest of India was complete. For once, Clive took no finder's fee. Even on the death of Mir Jafar, when Clive had been bequeathed £70,000, he used all of it to establish a charity for disabled Indian army veterans and their families. He left British India with a firmly British administrative system and the beginnings of a taint-free civil service that lasted until India's independence in 1947.

Clive's final term in India lasted just 22 months. A debilitating illness forced Clive to retire again to London, this time for good. His critics were circling. He felt neglected and abused, and that no one remembered the good he'd done for England or India. Constantly having to defend himself, and then only narrowly surviving his impeachment in Parliament, he was slowly succumbing to the strain. His life was reduced to a cycle of pain and self-doubt, only temporarily relieved by laudanum.

On November 22, 1774, at No. 45 Berkeley Square, London, Clive died. He may have doubled his normal dose of laudanum, even though his doctor had warned him such a rash act would almost certainly be fatal. Clive's enemies, following Caraccioli's book, said that he'd cut his jugular

with a razor. Others said it was a penknife. But a drug overdose—possibly accidental—is today the most commonly accepted explanation for the sudden death.

The family spirited Clive's body out of London quickly for a private funeral in the dead of night and a quick burial in St. Margaret's, Moreton Say. The exact spot of his grave is unknown, although he is said to lie in front of the lectern, not far from the brass wall-plaque honoring his memory and calling him "Primus in Indis." He was 49.

Strangely, Clive's fame would peak again in the 20th century, thanks to a writer of juvenile fiction called G. A. Henty (1832-1902), who wrote more than 30 novels, ripping yarns that celebrated the trials of gaining and maintaining a British empire.

In 1884 Henty published *With Clive in India*, the story of his adventures from Arcot through Plassey. The novel also had a great following in America and remained in print for decades. Henty firmly fixed the notion of a brave and selfless Clive in the minds of generations of English and American youngsters, without any of that tiresome business about money and moral accounting.

In the end, what saved Clive and his reputation was that he created in Bengal a *Pax Britannica* that made enormous profit possible for everyone, Bengalis as well as English. He was the tide that raised all boats. His bravery and good fortune transformed Calcutta from a dusty outpost into one of the world's most important mercantile centers. Moreover, Plassey was the beginning of the end of French influence on the subcontinent. Without Clive, India today might well be a French-speaking nation. Without any doubt, Clive in India laid the foundation for the vast British empire that was to follow.

Michael Olmert teaches English at the University of Maryland.

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THE LAST PAGE

A Guide to Clichés

BY BIL GILBERT

DEPARTING FROM SIMILE ON THE METAPHOR mainland, the *Fine Line* ferry crosses the Dire Straits to the Isle of Clichés three times a week. In fair weather, passengers can often catch a glimpse of both Salient Point and Talking Point, the rugged Brink of Disaster and the vast expanse of Glacial Indifference.

When it reaches its destination, the *Fine Line* docks at Anyport, which provides a sheltered anchorage and harbors no grudges. The road to Success, the bustling commercial hub of Clichés, is not well marked and often has bumpy twists and turns. The works of Succession artists and craftsmen are displayed at the Peanut Gallery. Especially thought provoking is a collection of finely spun tapestries, the so-called Webs of Deceit; a delicately executed watercolor mural, *Tissue of Lies*, which depicts historic happenings associated with Success; and several clever examples of locally manufactured windows of opportunity.

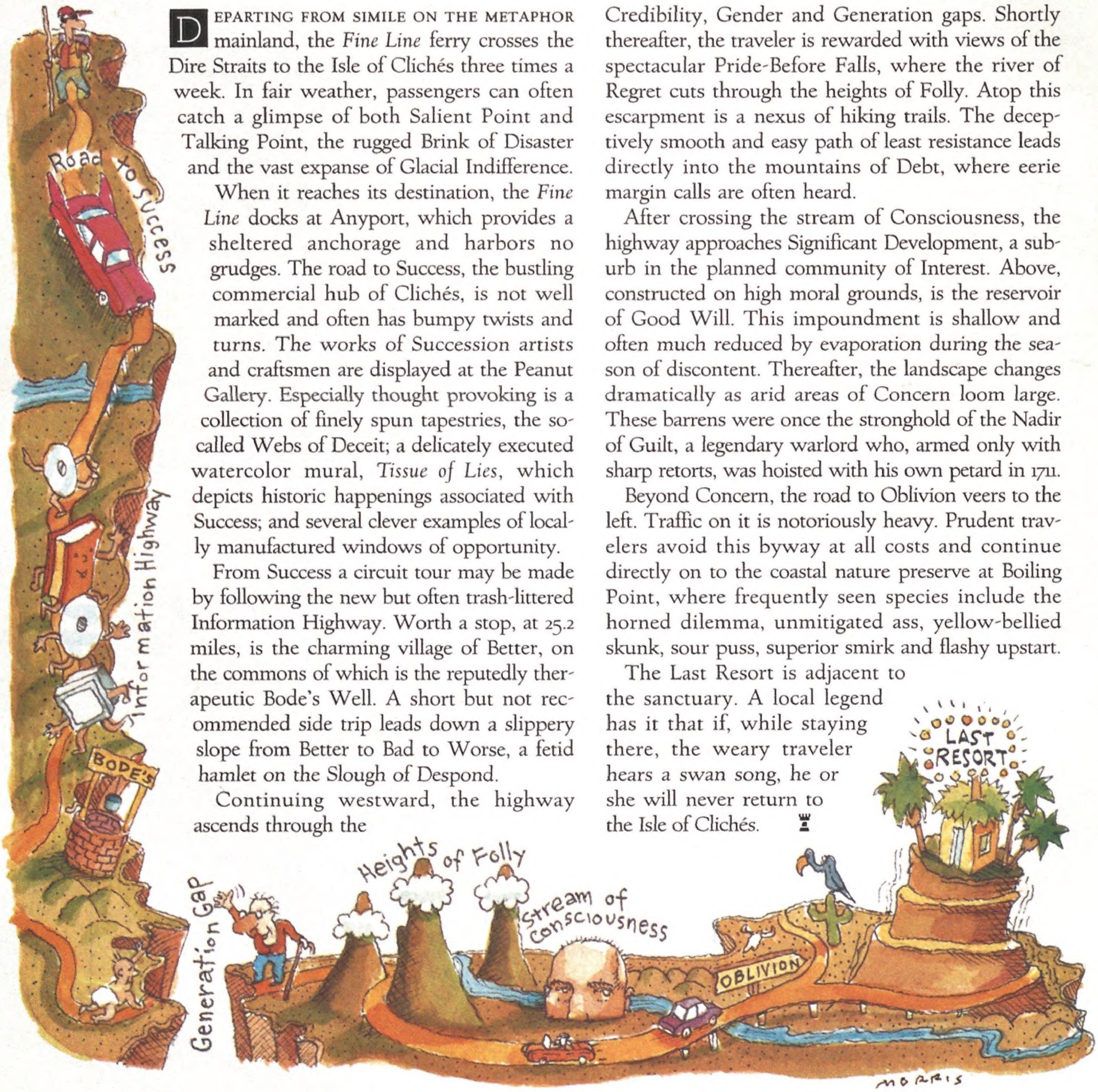
From Success a circuit tour may be made by following the new but often trash-littered Information Highway. Worth a stop, at 25.2 miles, is the charming village of Better, on the commons of which is the reputedly therapeutic Bode's Well. A short but not recommended side trip leads down a slippery slope from Better to Bad to Worse, a fetid hamlet on the Slough of Despond.

Continuing westward, the highway ascends through the Credibility, Gender and Generation gaps. Shortly thereafter, the traveler is rewarded with views of the spectacular Pride-Before Falls, where the river of Regret cuts through the heights of Folly. Atop this escarpment is a nexus of hiking trails. The deceptively smooth and easy path of least resistance leads directly into the mountains of Debt, where eerie margin calls are often heard.

After crossing the stream of Consciousness, the highway approaches Significant Development, a suburb in the planned community of Interest. Above, constructed on high moral grounds, is the reservoir of Good Will. This impoundment is shallow and often much reduced by evaporation during the season of discontent. Thereafter, the landscape changes dramatically as arid areas of Concern loom large. These barrens were once the stronghold of the Nadir of Guilt, a legendary warlord who, armed only with sharp retorts, was hoisted with his own petard in 1711.

Beyond Concern, the road to Oblivion veers to the left. Traffic on it is notoriously heavy. Prudent travelers avoid this byway at all costs and continue directly on to the coastal nature preserve at Boiling Point, where frequently seen species include the horned dilemma, unmitigated ass, yellow-bellied skunk, sour puss, superior smirk and flashy upstart.

The Last Resort is adjacent to the sanctuary. A local legend has it that if, while staying there, the weary traveler hears a swan song, he or she will never return to the Isle of Clichés.



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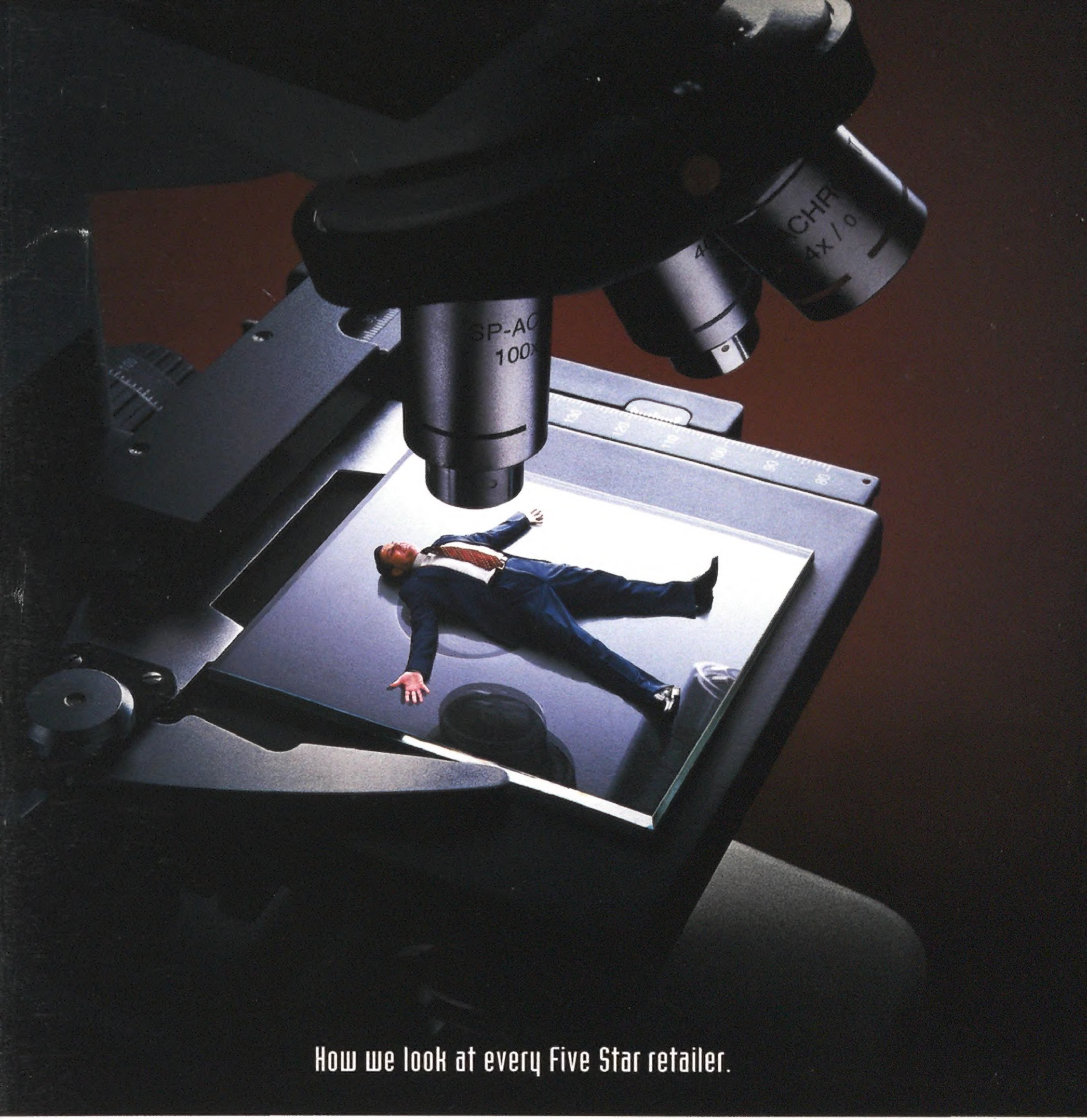

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